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VOLUME XIV. ST. LOUIS, MO., AUGUST, 1900. NUMBER 1.

A CASE OF CYSTIC TERATOMA COMPLICATED WITH HEMORRHAGE*

BY EDW. HORNIBROOK, M. D., CHEROKEE, IOWA.
Professor of Gynecology in Sioux City College of Medicine.

Mrs. P., aged 22; married three years; one child, 18 months old, which she is nursing; child strong and well developt. Mother always enjoying good health; small in stature, fair complexion, blue eyes. Has never been conscious of swelling or discomfort in the pelvic or lower abdominal region. Was taken with severe pain while straining at stool July 18, 1899. Fainted and was carried into the house.

Her physician found her almost pulseless, skin cold and clammy, knees drawn up—suffering intense agony, which was only slightly relieved by hypodermic injections of morphine. Small tumor discovered in right inguinal region.

Another physician called in consultation on morning of the 19th, found abdomen enlarged, tympanitic above umbilicus, dull on percussion over lower part of abdomen, exquisitely tender, constant vomiting, pulse 150, temperature 103 degrees—all the symptoms of general peritonitis, with a large, rapidly increasing tumor in the abdomen.

I saw the case on the 20th, about 2 o'clock a. m., and diagnosed hematoma with general peritonitis. I commenced the operation at 8 o'clock the same morning.

The parietal peritoneum was greatly congested, dark in color and friable. A large quantity of dark fluid blood was found in the cavity and some large clots surrounding the tumor—which was large and filled the abdomen as high as the umbilicus. The pedicle was short and thick and appeared to be attacht to the iliac fascia—the iliac artery being distinctly felt pulsating beneath the growth, which was semi-solid and filled with blood. The abdominal incision not being large enough for the delivery of the growth en masse, I opened the tumor and turned out the clots—being careful that none of the contents should escape into the peritoneal cavity. I ligated the pedicle in three sections, placed an additional catgut ligature on the end of the largest artery and sewed the peritoneum with catgut over the end of the stump. I then thoroly irrigated the peritoneal cavity with sterile salt solution at a temperature of 105 degrees, and continued this until the water came away clear and the cavity was free from clots. No sponges were used. I allowed a large quantity—probably two quarts—of the solution to remain in the abdomen.

Patient rallied quickly, indeed, the pulse improved and the color of the lips changed as soon as the hot irrigation was commenced. She suffered no pain and did not vomit after the operation and appeared comfortable. I gave a drachm of saturated solution of sulphate of magnesia as soon as she recovered from the anesthetic, and continued to do so every hour until I saw death approaching. She died from general peritonitis forty-four hours after the operation.

Macroscopic examination showed that the outer or larger sac contained some blood clots, a smaller tumor was found inside the large one in which some small hard bones could be felt.

I append the notes of the pathologist, Dr. Eli Grimes, to whose painstaking investigation and general courtesy I am much indebted. The left ovary and tubes were normal in size and position; the uterus was not enlarged. The right Fallopian tube, or remains of it, was as thick as a lead pencil and extended not more than half an inch from the uterine cornu. Its end was smooth and apparently covered with peritoneum. No trace of the right ovary could be found.

The case is, I believe, unique in medical literature. I find reports of several cases where the stump of the tube only was found, but in them there was always a history of an extra-uterine pregnancy or a salpingitis; but in this case there is no history of either—in fact, no history of disability or ill health—prior to the commencement of the last illness.

Dr. Eli Grimes reports: "A cystic tumor, with thick outer wall, containing within a smaller tumor. The covering of outer wall partly peritoneum, containing in a fold, a portion of the Fallopian tube, with fimbriated end. No ovarian tissue could be discovered. The outer wall contained striated muscle and small well developt bones, the type of which could not be determined. This wall was saculated and contained blood clots. The inner wall, that is, the covering of the small second tumor, was found to be dermal tissue with glands and hair. Within this tissue were many pockets or loculi containing either sebaceous matter or blood, the sebaceous matter predominating. In none of the sacules were the blood and sebaceous matter mixt, but separated by distinct walls. Some of the blood was undergoing organization. No ovarian tissue could be found. No placental structure could be made out. The tissues were too well developt to be fetal. Diagnosis—Cystic Teratoma of the Ovary complicated with Hemorrhage."

We might say of the growth, with Pope:

"The things we know, are neither rich nor rare,
But wonder how the devil they got there."

That it started in the Fallopian tube may, I think, be fairly inferred from the fact that the tube was severed close to the uterus and from the farther fact that part of the tube with its fimbriated end was found in the outer covering of the growth. That it was not an extra-uterine pregnancy is shown both by the history of the case and the statement of the pathologist that the "tissues were too well developt to be fetal."

Recent scientific research by Pof. Jacques Loeb, of the University of California, might possibly serve to explain the phenomena here presented. His experiments were made during last summer and autumn, with sea urchins, the male and female of which are separate animals.

He subjected the unfertilized eggs to a solution of sodium and magnesium, and within two hours they hacht, producing "blastulae," or the first "larvae." Placed in normal sea water, these developt into gastrulae and then into plutei, the latter bearing the same relation to a sea urchin as a tadpole to a frog. Prof. Norman of Texas had previously shown that the eggs of certain marine animals, when unfertilized, had a tendency to develop when sodium or magnesium were added to the water in which they were. Prof. Loeb's researches convinced him that only the presence of calcium and potassium in the sea water prevented the development of all unfertilized eggs, and that all the milt deposited by the male had to do was to overcome the effect of these chemicals.

If the researches of these scientists are confirmed by further observation, we will be forced to conclude that "an immaculate conception may be the result of unusual but natural causes," and that even the human female may be endowed with the potentiality of reproducing the species, if certain chemical substances which have the power when present, to restrain the cells from dividing and developing, are either neutralized or absent.

In this case it may have been possible that the chemicals being absent or neutralized, the cells divided and developt in the Fallopian tube, and by their growth, ruptured and amputated that tube and left an abnormal growth which anchored itself to the pelvic walls and grew slowly without influencing the patient's health, until the straining at stool ruptured a blood vessel and caused a rapidly fatal termination.

This, I know is speculation, and yet it is speculation with a basis of ascertaining facts, and is the only speculation which, in my opinion, offers a rational explanation of the growth of dermoid cysts and teratomata.

*Read at the meeting of the Western Surgical and Gynecological Association at Des Moines, Iowa, December 27 and 28, 1899.

PRACTICAL LESSONS LEARNED FROM MORE THAN ONE THOUSAND ABDOMINAL SECTIONS.*

BY EMORY LANPHEAR, M. D., PH. D., LL. D., ST. LOUIS, MO.
Formerly Professor of Surgery in the Kansas City Medical College and Professor of Principles and Practice of Surgery in the St. Louis College of Physicians and Surgeons; Gynecologist to St. Joseph's Sanatorium.

Some time ago a very dear friend, who has done a vast amount of work in the abdomen and pelvis, remarkt to me: "As you saw me work eight years ago you will see me now; there has been absolutely no change in my methods." I did not reply in the oft-quoted expression: "Wise men change their minds—fools never do," but I did say to him: "No one has yet reacht perfection in abdominal and pelvic surgery; neither you nor I can yet claim to be doing ideal intraperitoneal work." Unlike this distinguisht operator I have changed my methods in many particulars, and I believe for the better; nor am I yet satisfied.

*Read before the Des Moines Valley Medical Association, at Ottumwa, June 19, 1900.

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In carefully reviewing my last three hundred peritoneal sections I am certain I can detect flaws in technic which were responsible for fully as many deaths as were errors in judgment and other causes. From the faulty methods of my earlier work I am sure numbers of deaths occurred, as well as accidents not of fatal nature; accidents which I am positive occur quite frequently in the work of other operators, because I have made 128 secondary abdominal sections for:

(1) Fecal fistula.
(2) Urinary fistula.
(3) Post-operative hernia.
(4) Suppurative tracts dependent on:
  (a) The use of silk ligatures;
  (b) Incomplete removal of abscesses;
  (c) Infection by operator in removing cysts, etc.
(5) Breaking up adhesions.
(6) Incomplete operation.

This work alone has furnisht a school of experience from which some lessons of value have been learned; which, coupled with those taught by my own failures (as well as successes), form the basis of the following declarations. After one has made considerably more than 1000 peritoneal sections he may be pardoned for speaking somewhat positively—particularly if he is willing to be convinced of his own errors of procedure; having had this amount of work thrust upon me and feeling keenly the need of still greater perfection in methods, I hope to be excused if too dogmatic.

EXPERIMENTS ON ANIMALS.

I wish, first of all, to call attention to the absolute necessity for experimental work on lower animals, especially dogs. No man practicing medicine to-day can escape responsibility for death from inability to successfully operate for acute trauma of the intestine—whether gunshot or stab wound, intussusception, strangulated hernia or whatnot. Dogs there are in plenty; chloroform is cheap; assistance easily obtained; and time in abundance. Why should not every doctor, then, become expert in handling and repairing intestine? I do not mean that every country or city practitioner should aspire to become a McDowell or a Battey—there are hundreds of skillful abdominal surgeons thruout the land who can save lives which might be sacrificed to the ambitions of the inexperienced operator. In a majority of chronic cases it is far better to call upon the experienced specialist who is thoroly familiar with every minute, tho important, detail of preparation, technic and after-treatment, than to risk a death which might almost ruin a practice of years' acquirement. But there are emergency cases, now and then, in which it is impossible to wait for assistance from some neighboring town; a wounded vessel of the omentum may mean death from internal hemorrhage, a perforated intestine may mean a fatal leakage of feces, an incarcerated intussusceptum may mean irremedial peritonitis if the attending physicians wait for skilled assistance from afar. Must these doctors, then, stand idly by and watch the human life go out upon the sea of eternity? I see no reason why every doctor should not take the time and trouble to first read the directions for some certain operation and then carefully carry out every detail upon some anesthetized dog; not once, but again and again. When a score or more of animals have thus been used the doctor of average surgical ability will be fairly well trained to repair stab-wounds of the intestine, and possibly even shot-wounds, as well as to restore the intestine to its normal position from a volvulus or intussusception, and make a fairly good peritoneal toilet; he will surely not thereby become an expert abdominal surgeon, but he just as certainly will have become far better qualified for an attempt to save life in emergencies than if he had never handled a living, bleeding, slippery intestine.

Personally I must acknowledge great indebtedness to the canine family for much of what I know of peritoneal surgery. I am positive that scores of human lives have been saved by the hundreds of dogs I have experimented upon; and such I believe to be the experience of most abdominal surgeons of to-day. Only by actual experience, not mere observation or reading, can we learn to properly repair a wounded gut—an experience only to be obtained by oft-repeated suturing of the viscera in accordance with the directions of the leaders in intestinal work.

For the prevention of unnecessary suffering on the part of our brute-subjects I must plead that beginning experimenters should not attempt to save the lives of the first few dogs used in this plan for advancement; the beginner should do his work again and again upon the same dog at one sitting, and then kill the animal with a surplus of chloroform. After the fifth or sixth experiment it is justifiable to allow the dog to regain consciousness and to recover from the operation if possible, proper care being taken by muzzling, etc., that the wound shall not become contaminated. Indeed, in my own experimental work, so careful am I to prevent suffering (a brutal man has no moral right to be a surgeon), that if my dog is to be kept alive I am just as careful in boiling my instruments, cleaning my fingernails and preparing the field of my operations as I would be with a human being; and if one hopes to study effects of new procedure it is absolutely essential that such precautions be taken—regardless of one's disinclination to inflict pain. By such care experimental work may be carried on without the production of much suffering, since a perfectly aseptic wound, properly protected, heals without pain. One dog I used for 28 abdominal sections; and he remained my faithful friend as well as ally to the very last—a pretty fair indication that he never suffered much at my hands.

RAPIDITY OF OPERATION.

One of the greatest advantages of experimental work upon dogs is that the operator acquires a dexterity and confidence in himself by reason of which he can do his work quickly and well. The value of rapidity in operating in the abdomen and pelvis can not be overestimated; the waste of a few moments may be the loss of a human being. A cardinal rule for every operator should be: "Be fast, be fast, be fast—but be not too fast." At one time I prided myself upon the extreme rapidity of my work; thus I remember, to illustrate, that I once made a complete abdominal section for ovarian tumor in 8½ minutes to the time of applying the gauze over the thru-and-thru silk sutures in the parietes, and finisht three sections within one hour. This I now regard as undue haste, unnecessary haste, unjustifiable haste, because it did not enable me to do many of the small things perfectly; and upon small things most of our successes or failures depend. Mere recovery from the operation is not all we seek—ultimate cure is our desire. So now I do my work more deliberately. Still my earnest desire is to always remain among the rapid operators, for the reason that as great rapidity as is compatible with good work is always best for the patient, since

1. "Chronic" surgery means much shock;

2. Slow work necessitates much chloroform, and thus danger—far more patients dying from too prolonged anesthesia than from the severity of operation;

3. Long exposure of wound-surfaces and of viscera gives far greater chance of wound infection—and the best of surgeons still fear sepsis and peritonitis; and,

4. Too long exposure of the patient to the chill of the operating room often leads to a fatal termination.

For these reasons, as well as others, speed should always be striven for, not at the expense of ideal methods, but frequently at the expense of the convenience and inclination of the surgeon. No storytelling is therefore permissable during the progress of a serious, complicated section, words to assistants should be as few as possible—every cell of brain and muscle engrost solely in obtaining perfect results in the least possible time—and every act made to furnish results.

There are a number of points bearing upon the question of speed and safety which may well be discust:

1. In opening the belly ordinarily two or three strokes of the knife should be all that is necessary. The man who takes ten minutes instead of ten seconds to open the abdomen is a dangerous man in abdominal and pelvic surgery. As already mentioned, experimental work on dogs gives a man such knowledge of anatomy and skill in touch as to enable him to expose the contents of the abdomen in a few seconds with perfect safety.

2. The operator's clothing should be so arranged as never to interfere with the quickest movement. Every one can purchase white duck suits at 65 cents a suit (if not desirous of having a finer quality), which can be baked in an oven until sterile, and put on over the underclothes just before beginning operation; and should always be used save in emergency work where unobtainable.

3. The head should be envelopt in four to six thicknesses of gauze (preferably sublimate), completely covering the hair and forehead. Much valuable time is lost by waiting for some bystander to wipe the sweat from the face; and I employ a face mask of gauze for similar purposes as well as to prevent a hair or drop of sweat from falling into the belly. (Two serious cases of peritonitis in my earlier work were directly traceable, one to a hair from the mustache, the other from drops of sweat—each an easily preventable and unpardonable accident.) Ten cents' worth of cloth may thus save a human life.

4. Not more than two assistants should be employed; one for the chloroform and one for the side of the table opposite the operator. Numerous untrained assistants mean delay. Of course, it is a convenience to have some one to shift the table and handle slopjars, etc., but the operator himself ought always to reach for his own instruments upon the table close at hand. Besides the waste of time necessitated by a special assistant for instruments, there is the added danger of more hands; every hand is a source of possible infection; less fingers, less danger. For pelvic section, such as colpotomy, hysterectomy, etc., two assistants are indispensable, in addition to the anesthetist.

5. The fewest possible instruments should be employed. In a multiplicity of instruments, as well as of assistants, there is danger; some danger from loss of time in finding what is required, more from the number of joints to retain infective germs.

6. All sutures should be cut of proper length and placed upon a sterilized dish or towel, close at hand; and all needles threaded in advance of operative work so that no time shall be lost in closing the incision and getting the patient into bed. A few minutes' extra time at the end of an operation may turn the scales against recovery; hence, haste in completing closure of the wound is usually advisable.

7. For the same reason all gauze, cotton, bandages, etc., needed to protect the wound should be prepared and at hand for immediate application at the close of operative work. Many wounds have been infected by too elaborate an attempt at removal of every blood stain in the vicinity of the incision. A little clean blood beneath bichloride gauze is far preferable to a soiled towel in accidental contact with the field of operation.

PREPARATION OF PATIENT.

Long experience has convinced me that too early opening of the abdomen constitutes an element of much import in raising the mortality-rate. Admitting a patient to the hospital one day and making a peritoneal section the next is a serious mistake. Improper preparation causes death.

First of all—save in emergency cases like appendicitis, trauma, strangulated hernia and intussusception—a careful physical examination is almost imperative; chest, stomach and kidneys receiving especial attention. Too many operations are made upon patients practically moribund. Examination of the blood is of great value, particularly as bearing upon after-treatment; there are many expert operators who are failures as surgeons, merely because they so neglect the after-treatment that either death or continued ill-health follow operation; a poor diagnostician and a poor therapist makes a bad surgeon.

While prepartory purgation is generally advisable, it has been greatly overdone. Weak women stand purgation poorly; men slightly better; an extra dose of Epsom salt may cause a death from shock. While it is often desirable to have the intestines like ribbons, the Trendelenburg posture does away with much of the necessity in cases where very free purgation would be dangerous. Two or three good movements of the bowels a few hours before operation and a copious enema just prior to entrance to the operating room should usually be sufficient.

If post-operative peritonitis is feared from some pathological condition known to exist an ounce of Epsom salt may well be given a half hour before operation; a warm enema a few hours later will then cause free peristalsis. If it be suspected that the gut may have to be opened the salt should not be given.

Formerly I left my patients to be shaved and otherwise "prepared" until under the influence of the anesthetic. This I believe to be a most serious error because it prolongs anesthesia too much and the cleansing process is often not as nearly perfect as it should be. Now, whenever possible, I have my patient two days in hospital to secure (a) perfect evacuation of the intestinal tract; (b) flushing of the urinal tract by copious draughts of medicated or colored waters; (c) thoro cleaning of the skin by baths, scrubbing the abdomen and vulva; (d) sterilization of the vagina by frequent and properly administered douches.

The method of securing a fairly clean field of operation is worth describing: On the day of admission, after the first bath, the abdomen and vulva are shaved and scrubbed for ten minutes with green soap, then with bichloride solution, 1 to 2,000, for two or three minutes, and then rinst with alcohol; then a gauze pad applied. This procedure is repeated every twelve hours, until the evening before operation, when a little ether is used before the alcohol, and a bichloride pad used.

When thus prepared all that is necessary at time of operation is to scrub the skin until pretty red, rub ether in in abundance, wash off with alcohol and rinse with bichloride solution. This surface is then covered with a sterile towel and the vagina scrubbed with stiff brush and green soap for at least two minutes, filled with alcohol, which is allowed to remain a full minute and finally rinst with sublimate solution.

In emergency work. thoro scrubbing, the application of turpentine and alcohol or of ether and alcohol followed by sublimate solution must of necessity suffice.

THE OPENING.

For some years the linea alba was carefully sought as the site of the incision—occasionally with loss of valuable time. Experience taught that better healing occurs when the cut is made thru one of the recti muscles, provided it is properly closed at the end of operation. The same thing is true of the appendix, the gall-bladder and the kidneys; cuts thru the muscles instead of between them give better healing and consequently less hernias. Good suturing, layer by layer, and the prevention of suppuration in the wound are the two great prophylactics of post-operative rupture.

In making the cut a single cut should, if possible, expose the peritoneum. Haggling, slow dissection with forceps, tearing the tissues, etc., predispose to bad union—ergo hernia. In appendicitis this rule must be somewhat modified; but even here the man who gets into the abdomen most quickly (and then gets out again), is the surgeon of good results; slow surgeons sign death certificates. With very large tumors the abdominal wall is usually thin, often scarcely more than twice the thickness of the skin, in which cases some care must be exercised not to cut too deeply.

In size the opening should be large enough to allow the operator to work speedily and well. "An inch and a half incision, a week and a half in bed" (and a dollar and a half fee), is ideal surgery for the removal of a normal appendix or one affected by only appendicular colic; or for removal of healthy tubes and ovaries if one be in the spaying business; but not for the excision of abscess-cavities or extirpation of tumors of any magnitude.

After exploration thru the small primary opening, the hole should be enlarged to the necessary extent with knife rather than scissors, the latter making an irregular, slightly torn, wound instead of the clean cut so much to be desired.

Transverse incisions are to be avoided except under extraordinary circumstances.

Bleeding from the incision (frequently quite severe in gall-bladder cases), ought to be arrested before widely opening the peritoneum. Small vessels will be controlled readily by the mere pressure of the hemostats before the end of work; larger ones are best ligated with catgut. But too much time should not be spent in this save in some special case for a particular reason, as the small amount of blood from oozing and little vessels will be caught on the pad of gauze almost invariably introduced as soon as the abdomen is open.

PROTECTION OF VISCERA.

With the introduction of the Trendelenburg posture, and the adoption of a more thoro preparation of the patient by which the intestines are made to be like ribbons, markt trouble with obtruding guts and omentum became the exception instead of the rule. Nevertheless, the viscera need ample protection in most cases, especially if pus-conditions are present, tumors to be removed or intestines to be opened. Therefore I make it an invariable rule to boil at least eight towels in the pot when I cook my instruments just before operating—one to protect my suture material, four for surrounding the wound—held in place by boiled safety-pins, usually—and three or more for enveloping the intestines if they have to be taken out of the abdomen. "On a pinch" they may be used inside the abdomen if gauze becomes scanty. I usually boil ten yards of sterilized gauze in the same dish; more if it be a formidable undertaking; to be used for absorbing blood, protecting viscera, etc. But in addition I have a lot of "pads" made eight inches square, of eight layers of gauze, also boiled at time of operating, so prepared that there are no threads exposed at the edges and with twelve inches of tape firmly sewed to one corner. This tape permits the pad to be put into any part of the abdomen or pelvis without fear of its being lost, even temporarily, as a hemostatic forcep is attacht to the end of every tape and permitted to hang over the side of the patient, or lie upon the abdominal wall far away from the opening. If by an extraordinary situation it is imperative that a free piece of gauze be left in the abdomen for a time a clamp is always applied to the corner of the guaze and kept outside the belly.

By these simple plans the abdomen may be invaded in any of its parts and the viscera afforded ample protection without any greater difficulty than under former loose methods and without any of the narrow escapes from leaving gauze in the abdomen—not to mention the fatal cases.*

Plenty of warm, normal-salt solution is always at hand to keep the enveloping towels moist and warm if it becomes necessary to withdraw the intestine and surround it with the towels. Neglect of this might cause a death.

As an indirect protection of viscera I have the operating room as nearly 100 degrees F. as is possible, so that even long-continued operation is not attended with chilling of the abdominal contents.

This temperature is not conducive to the comfort of the surgeon, but it can be borne if he has nothing on but his duck suit and Bergmann gown; and I am sure that by its adoption I am able to save some lives that would be lost if subjected to the same procedure in rooms heated to suit the feeling of the doctor rather than the welfare of the patient.

* In one of the patients upon whom I operated for fecal fistula, I found that a most competent, skillful surgeon had left a piece of gauze in a fold of the omentum. Nature, in her efforts to get rid of this foreign body, had caused extensive adhesions around the gauze, one little end of which was in the intestine whither it had "ulcerated" its way, the other end being close to the abdominal incision which had opened to allow escape of pus and fecal matter.

CHANGES IN INTERNAL TECHNIC.

As a rule "pedicles" have been abandoned in the removal of tumors, etc. On the broad ligament clamps are applied, a careful dissection of peritoneum made, the tissue cut, and the vessels isolated and tied as in any other part of the body; always unless the condition of the patient or the peculiarities of the growth are such to prohibit. When the mass, or uterus, or what not, has been cut away the peritoneal surfaces are brought together with fine catgut, thus completely shutting off the abraded surfaces and effectually preventing the formation of adhesions—certainly a great advance.

Even with the largest tumors no pedicle is formed—it is wholly unnecessary and highly objectionable from every standpoint.

In simple oophorectomy and salpingectomy the ligatures and raw surface are similarly buried beneath a peritoneal covering.

In applying the catgut to an intraperitoneal vessel the thread is not merely thrown around the vessel and tied, with the danger of possible slipping, but is put into the tissues surrounding the artery and vein by means of a needle and then tied snugly.

Oozing is prevented by carefully tying all adhesions possible and by covering in the raw surfaces. The necessity for drainage is thereby decidedly diminisht—in fact, drainage is now but rarely employed save in some cases of appendical abscess and in pelvic diseases attackt from below or by the combined suprapubic and vaginal routes.

Other changes in intraperitoneal technic have not been sufficiently important to merit discussion.

CLOSING THE ABDOMEN.

The first thing after completion of operation and removing all blood from the pelvis I hunt for the omentum and carefully pull it down so that it will not only lie behind the line of incision, but may be tuckt down around the field of operation wherever that may be. The omentum is then covered with a gauze pad and suturing begun.

So long as I made my incision in the linea alba and used the thru-and-thru method of suturing advocated and practist by Joseph Price I had more or less post-operative hernias. Since adopting the plan of cutting thru muscular tissue and more perfectly closing the wound I have had but one single rupture—in my last 350 or 400 operations—tho more may yet possibly develop. Upon the whole, however, I am convinced from my own work that the safest way is to close the peritoneum with catgut (withdrawing the gauze from the lower end of wound just before tying the catgut—the lower end being chosen so as not to draw the omentum upward); then introduce silk-worm-gut stitches about three-fourths of an inch apart thru skin, fascia, muscle and the raphe of peritoneum formed by the line of catgut sutures; then close the sheath of rectus with fine catgut; then bring the superficial fascia together with catgut if the wall of the abdomen be quite thick, and finally tie the silk-worm-gut stiches loosely—not tight enough to kill the muscle-tissues therein included. With this mode of closure and sufficient care that no stich-abscesses form the danger of hernia is reduced to the minimum. Nor do I employ an abdominal supporter or bandage following such closure. The first dressing is made about the tenth or eleventh day, when the stitches are removed; the second, whenever the patient is ready to leave for home, at which time a rather firm compress of gauze is put over the site of incision and held in place by several strips of adhesive plaster past nearly around the body, this being allowed to remain three weeks, at which time union is about as perfect as it will ever be—certainly stronger than it will ever become in a woman who wears a typical supporter.

On account of the necessity for this perfect closure of the abdominal incision I have now abandoned drainage above the pubes in all pelvic work—opening the already sterilized vagina and inserting drainage into it, closing the upper incision as just described.

Unfortunately in appendicitis and a few gall-bladder cases drainage is a necessity and hernias will follow in spite of all care in a certain proportion of cases.

OPERATIONS ON GALL BLADDER.

In operating for gall-stones still within the bladder, I have for some five years opened the bladder, removed the stones, sutured the musculosa (with catgut, since silk would remain as a nucleus for future concretions), covered the incision by Lembert sutures and dropt the bladder back into its normal position, closing the abdomen without drainage. This is, perhaps, "cold surgery," as my friend Byron Robinson, of Chicago, terms it, but it is ideal surgery, and thus far has given ideal results. It must be borne in mind, however, that this procedure is not applicable to bladders which are suppurating or which are so degenerated that repair and restoration of function are questionable; in the latter I remove the gall-bladder in its entirety, just as I would excise a suppurating or degenerated Fallopian tube.

This leaves cholecystostomy (generally called "cholecystotomy"), to be applied only to those cases in which the stones are not all removable and those in which no stones are present, tho the symptoms were typical of cholelithiasis, but exploration shows the gall-bladder perfectly empty or filled with either "white bile" or a thick, molasses-like substance. In such instances fixation of the edges of the visceral incision into the parietal cut and the maintenance of free drainage for some weeks will lead (generally) in the one class to a discharge of the calculi, and in the other to gradual restoration of the normal bile; in both free discharge of bile often appears within a few days, when the wound may be allowed to close slowly, with a fair chance of perfect recovery.

CONCERNING SUTURES AND LIGATURES.

A few words, based entirely upon experience, regarding suture material may not be without value to at least the beginner in abdominal work.

I notice from time to time articles advocating the use of silkworm gut for buried sutures. It should never be used for this purpose, even for hernia. I am even yet removing buried silkworm gut sutures which were used years ago to close the ring. It is a material which can not possibly be absorbed, which is encysted with far greater difficulty than any other suture material, and which is therefore likely to work its way to the surface even many years after its introduction. For buried sutures there are only two materials which can be absolutely relied upon: silver wire and catgut.

For temporay retention formaldehyde catgut serves the best purpose; it can be trusted to hold the parts in apposition for at least four days, and to hold a large bloodvessel for not less than three days. I have tied every great artery in the human body, excepting the aorta, with catgut, and have never had a case of secondary hemorrhage. If a longer period than three to five days is desired, chromicized gut No. 2 or No. 3 may be employed; it will not yield before two weeks.

Silver wire should be employed for those rare cases where permanently buried sutures are desired.

One word of caution is necessary regarding chromicized catgut; it should not be used in suturing the kidney (neprorrhaphy), and especially if the stitch is to be past thru any kidney structure; it is apt to become infected from within and cause trouble for some weeks or even allow the kidney to escape. (I am now stripping the capsule from the kidney for quite a little distance on either corner of a crucial incision, removing much of the retroperitoreal fat, stitching the loosened peritoneum up around the kidney, and then stitching the capsule to the fascia with formaldehyde gut and closing the wound without drainage; which gives an ideal result in wandering kidney.)

Now that formaldehyde catgut, as prepared by Hollister, of Chicago, can be boiled freely with the instruments and dressings, the objection that it can not be sterilized is overcome. In my hands catgut has proven perfectly satisfactory in the abdomen and pelvis for more than ten years; and with the new process of sterilization I feel doubly sure of good results.

Silk I have long since abandoned save for intestinal suturing; there is nothing which satisfactorily takes the place of milliners' silk, No. A, for making the Lembert stitch in the serosa; but for the musculosa I now use catgut. Only when nothing else is obtainable do I use silk—its objectionable features being too many and too well known to require mention; certainly as a buried suture or ligature its use is not now justified; the simple fact that some non-progressive men in Philadelphia and New York still employ it is no reason why more modern operators should follow their example.

Silkworm gut is the ideal suture-material for closing incisions in the skin.

In this address I have purposely avoided mention of any particular form of disease, limiting my remarks to general principles. But in view of the importance of the subject, the fact that every physician is compelled to decide, at some time, as to the necessity for operation, and because I hold some rather unusual opinions—for a surgeon—I have decided to give my

CONCLUSIONS RELATIVE TO APPENDICITIS.

From an experience covering somewhat more than 200 operations for appendicitis, and probably twice that number of other cases seen, but not subjected to operation—being without symptoms demanding surgical treatment—I have formed some very decided opinions. A few are as follows:

1. Some years ago I noticed the frequency with which pyosalpinx of the right Fallopian tube is associated with appendicitis. This combination so affected me finally that I adopted the rule: Always remove the appendix vermiformis in right salpingectomy. It is worthy of note that the characteristic signs of appendicitis are generally absent in such cases, being maskt by or merged into those of the pelvic disease. The necessity for the adoption of what may appear to be too broad a rule (to remove the appendix in every right salpingectomy) was made apparent

by the occurrence of appendical abscess, requiring secondary abdominal section, in several patients where merely the tip of a thickened appendix was adherent to the infected tube, and at the time of primary operation it was thought to be unnecessary "mutilation" to remove the appendix.

2. Imprest with the gravity and frequency of appedicitis, and the necessity of its prevention, I have for long made it a rule to remove the appendix—an absolutely useless structure—whenever the abdomen is opened at such a point that it is accessible, and the condition of the patient is such that the slight additional trauma and the short continuation of anesthesia will not add to the danger. *

3. Chronic appendicitis is so often associated with right floating kidney that now I remove the appendix when making a right nephrorrhaphy, as it takes but ten minutes more, does not complicate nor retard convalescence and makes relief from suffering doubly sure.

4. Having seen so many patients recover from appendicitis without operation, my rule is not that of many bold surgeons: "Operate as soon as the diagnosis is made," but "operate whenever the conditions demand it." Operation should be made under the following circumstances:

(a) After the subsidence of the acute symptoms, when a mass remains in the region of the appendix indicating that the infected area has been well walled off from the general peritoneum; the danger of recurrence is too great to allow the affected appendix to remain if the patient will consent to its removal.

(b) After the fourth or fifth day if the symptoms do not rapidly improve the probabilities of recovery without operation are decidedly meagre; and the period of comparative safety in operating has arrived.

(c) As soon as the symptoms will permit in every case of recurrent appendicitis; recurrence of this disease means danger and operation should invariably be done after the second or third attack. It is preferable to wait until the acute inflammation has subsided, but not until the patient is out of bed, for he will often then refuse.

(d) Where the disease begins as a mild attack, but the symptoms steadily become more and more severe; a number of examinations of the blood should be made (a count of the polyneuclear leukocytes being made every few hours, and carefully recorded upon a chart), and if the blood-count show a rapid increase in the white blood corpuscles operation must not be long delayed.

(e) In all cases of "fulminating appendicitis," as soon as the diagnosis is made; delay means death; and unfortunately so does operation in most instances, but it gives the patient his only chance of recovery.

(f) In all cases of appendicitis, regardless of other signs or conditions, if the blood examinations show constant increase of the leukocytes to a markt degree; numerous recent cases have shown perforation or gangrene of necessarily fatal degree when the clinical picture was favorable, yet abdominal section was performed, upon the blood-sign alone.

Appendicitis is a most deceptive disease in its symptomatology, and until recently many patients have been subjected to operation unnecessarily, while many others have been allowed to die without operation because the symptoms were apparently favorable. Now, with this valuable guide, we can foretell the outcome positively in a large proportion of cases; leaving untoucht many patients who, under rules of the very recent past, would be subjected to a wholly unnecessary operation, and saving many lives that otherwise would be sacrificed by an uncertainty as to the necessity for surgical treatment.

As a local measure in the management of erysipelas the following is highly recommended: Wash the inflamed area and the surrounding healthy skin thoroly with a carbolic solution of 1 to 40 strength, then apply a heavy coating of the following ointment:

Carbolic acid, 2.
Tannic acid, 2.
Boric acid, 4.
Vaselin, 30.

M. Sig: Fresh applications may be made when necessary.

*An amusing circumstance anent this practice may be noted. Some three years ago, during an abdominal section for pelvic abscess, I removed a normal appendix. About a year later a well-known operator of St. Louis opened the same woman for perityphlitic abscess, evacuating a pint or more of pus from around the cecum. Describing the operation to me some days later, he declared that it must have been a true "perityphlitic abscess" (which was undoubtedly true) as he hunted for a half hour for the appendix and could find no trace of one's having existed; and he regarded it worthy of reporting in some journal as a case of apparent appendicitis—with all the urgent symptoms of that disease—in which there was congenital absence of the appendix. His disgust may be imagined when I told him I had the appendix at home in a bottle.

TREATMENT OF RETRODISPLACEMENT OF THE UTERUS.

BY WILLIAM JEPSON, M. D., M. R. C. S. (Ed.), SIOUX CITY, IOWA.
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Excepting lesions, the result of traumatism to the parturient canal, incident to parturition, there is probably no other gynecic condition so frequently met with as that of retrodisplacement of the uterus, and I may say, none so often most badly treated, either thru an imperfect comprehension of the factors which have induced or continue to act in maintaining the displacement, or thru imperfect execution of such technic as shall have for its object the correction of the malposition. I will briefly allude to what may be considered the normal position of the uterus and the agents maintaining it thus, as well as some of the factors productive of retrodisplacement.

The normal position of the uterus in the pelvis is maintained principally by a sling or cradle of tissue extending from the symphysis pubes to the cervix anteriorly, and from the sacrum to the cervix posteriorly thru the utero-sacral ligament; a support which permits of a considerable degree of mobility and alteration of the position of the uterus, entirely within the range of the normal. The normal position of the uterus is that of anteflexion, which is maintained by the traction of the utero-sacral ligament upon the cervix and by the pressure of the intra-abdominal contents upon the posterior or upper aspect of the uterus when the woman is in the erect posture.

Anteflexion per se is never an abnormality, and demands no attention even in its most markt form, unless it occasions sterility, dysmenorrhea, or endometritis, when dilation and curetment (if endometritis exist) will as a rule suffice to afford all necessary relief.

On the other hand, retrodisplacement of the uterus must be lookt upon as of the highest clinical importance, for, while it may certainly exist for a time in variable degrees without occasioning much disturbance of normal functions, yet its correction, I think, should be undertaken thru appropriate means when discovered, for sooner or later markt disturbances of health may confidently be expected to ensue upon the disturbances of the circulation, and consequently of the nutrition of the uterus and its adnexa, while other intra-pelvic structures will frequently suffer from the abnormal pressure.

Of the many factors which are capable of inducing a retrodisplacement of the uterus, some one or more of the following may be lookt upon as a frequent cause. 1st. Anything which may force the fundus of the uterus backward (as an overdistended bladder, blows, falls or tight bandaging after parturition, so that the intra-abdominal pressure shall be directed against the anterior in place of the posterior surface of the uterus) will induce it, and when once existing will continue to maintain it, while tight lacing, wearing the clothes suspended from above the hips can only tend to aggravate this. 2nd. Failure of involution of the round and utero-sacral ligaments, which should follow upon parturition, which failure to involute is particularly liable to occur if the perineum be extensively lacerated, so that the anterior rectal wall loses it support, and in the event of existence of constipation a rectocele results, and as the anterior wall is drawn down the cervix follows—displacing the fundus backward. 3rd. Existence at some previous time of intra-pelvic inflammation with resulting adhesions, which adhensions contracting drag the uterus into an abnormal position. Tumors may of course displace the uterus, but in that event the displacement can only be lookt upon as of secondary importance—in fact, this is also true of displacement due to adhesions incident to a tubercular or septic pelvic peritonitis or salpyngitis.

In order that we may select for each case a plan of treatment which may be judicious and have some prospect of success, we must first determine, if possible, the cause which led to the displacement and the factors at work maintaining it or causing its return when corrected. We will, therefore, by a bimanual examination, determine the existence of the displacement as well as the absence or presence of adhesions, tumors, etc. In the absence of these latter-named factors, we may attempt a reposition of the uterus bimanually (never with a sound), or what is better, placing the woman in the knee-chest position, and with the perineum retracted and the cervix exposed by means of a Sims speculum, the same may be grasped with a tenaculum and gentle traction made, while pressure is made upon the fundus of the uterus thru the posterior vaginal fornix by means of a uterine repositor, in lieu of which a small amount of cotton wrapt firmly about a pair of dressing forceps may answer the purpose. If the uterus is easily reposited, showing the absence of adhesions, the next question arises as to means of maintaining it in its normal position. This may be done by making the utero-sacral ligament tense by means of a suitable mechanical device, thus sus-

pending the cervix in its normal position, it being remembered that in this way only can a tampon or a pessary maintain a normal position of the uterus when once secured. Tampons of lamb's wool or other suitable material may retain the uterus in position, and are possest of the advantage of being less susceptible of producing injury to the patient than may be done with a pessary—at least an ill-fitting one. On the other hand there is the disadvantage of having to have a new one introduced every four or five days; therefore, in the majority of cases, a pessary will be resorted to, and a Hodge, Smith, Munde, or Thomas will, of all pessaries to my knowledge, meet this requirement best. For any pessary to do this, due regard must be had for its adaption to the requirements of each individual case, its width being such that no undue tension upon the lateral vaginal wall exists,while its length should be such that when the upper bar is in the posterior fornix its lower bar is opposite the internal meatus urinarius. Its curve should be such that the upper bar does not press upon the cervix, but draw the posterior vaginal wall upward and backward. Its introduction is best accomplisht while the patient is in the knee-chest position. It certainly requires a degree of mechanical skill to properly fit a pessary, far greater than many believe, and a lack of success in the use of pessaries is not infrequently attributable to this cause.

How long may the use of a pessary be persisted in, with a view of overcoming a retro-displacement? Probably from three to six months, and in exceptional cases even for a longer period. Where cervical laceration and consequent subinvolution exist, or the perineum be torn, the same should be repaired before maintaining of the uterus in its normal position by pessaries is attempted. May we expect the pessary to effect a cure at the end of this time? Yes, if properly fitted and the displacement is of recent production. On the other hand, if the same has existed over a year or two, we must look for such disturbances of the ligamentous support of the uterus to have taken place that a restitution to normal function is not to be expected.

Failure to secure a maintenance of the uterus in its normal position unsupported after a faithful use of the pessary for a period as indicated, or in the event of having at the time of our examination found the uterus firmly fixt in its abnormal position by adhesions, what shall be done? In such cases we must seek relief thru one of the numerous operations which have been devised. Theoretically a restoration of the utero-sacral ligament to a proper length, so as to hold the cervix up and back, would seem to be indicated. Altho this has been suggested by several and attempted by some, such operations are yet within the domain of experimental surgery; we are, therefore, compelled to consider procedures which have for their object holding the fundus of the uterus forward, as may be done by shortening the round ligaments at the distal end, as in the Adams-Alexander operation, or at their proximal end thru an abdominal incision, as in the Wylie-Mann operation, or thru a vaginal incision as advocated by Vineberg, or lastly, suspending the fundus by a new ligament, formed from the anterior abdominal parieties, as in ventrofixation.

Correction of retro-displacement of the uterus thru shortening of the round ligament by the Adams-Alexander operation or thru ventrofixation will only be considered, for, while many of the other operative procedures which have been from time to time advanced and advocated are certainly novel in their concepiton and not without advantages, yet where the abdominal cavity is of necessity opened, probably no procedure equals in applicability or efficiency that of ventrofixation when properly done; while if for any reason it is undesirable to open the abdominal cavity, shortening of the round ligaments in the canal may be resorted to in event of the uterus being movable. As already stated, the Alexander operation has the advantage of being done extraperitoneally—at least practically so—but as it can only be done in cases where there is an absence of adhesions, and as many of these cases are susceptible of alleviation thru a properly-adjusted pessary, the range of applicability of this operation is necessarily somewhat limited. As all retrodisplacements which are dependent upon, or associated with adhensions, of any markt degree (and this is the condition presented in a fairly large per cent of cases) must have the same broken up, a celiotomy becomes a necessity in order to permit of this, and when the abdomen is once opened, fixation may be done, and in my opinion no more efficacious means of maintaining the uterus in a position approximating the normal can be employed than that of ventrofixation. I will briefly allude to a few points in connection with this operation, which I deem should be kept well in mind if the most favorable results are to ensue. First, existing endometritis with subinvolution must have received appropriate attention, and lacerations of the cervix and perineum must have been repaired. Second, the abdominal incision should begin about one inch above the symphysis pubes and extend upward for a distance of not over two and one-half inches, which will give ample room for all manipulations, except in fat women, where the incision in the skin and superficial fat must be enlarged. Third, the adhesions, if any, are now gently broken up by means of the index and middle finger carried behind the uterus, diseased adnexa appropriately treated, and the uterus brought into position and held there by means of two fingers or a tenaculum. Fourth, we are now ready to introduce our retention sutures. Use a small, half-curved needle and No. 7 or No. 8 braided silk. The points of entrance and exit of the needle should be about one-half inch apart, while about the same amount of uterine tissue should be included. Two sutures are used, which should be placed about one-fourth to one-half of an inch apart. These sutures should be so placed in the uterus that the superior one will be on a level with the uterine cornu. After these sutures are placed in the uterus they should have their ends past thru the peritoneum at the lower angle of the wound on their respective sides, their ends caught by a pair of catch forceps, and the sutures necessary for closing the abdominal wound past, the one at the lower angle of the wound being made to pass thru the peritoneum covering the uterus so as to prevent its weight from separating the peritoneum from its abdominal attachments. The retention sutures are now tied and the ends cut close to the knots, after which the abdominal sutures are tied and the usual dressing applied. At the end of a few months or so, there results a band of tissue from one to two inches long and of sufficient retentive power to hold the uterus, and yet affording it that degree of mobility which is essential to comfort in walking as well as in the change of position required by varying intrapelvic viscera, while pregnancy, in the event of its occurrence, will not be interfered with thru the fact that continued lengthening of this new ligament takes place, and in order to have this occur after ventrofixation we must aim to have the uterus anchored by as limited an area as is compatible with safety in its retention.

A CASE OF PERINEPHRITIC ABSCESS COMPLICATED WITH MYXEDEMA.*

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On October 19 I was called to see Mrs. M., 56 years of age, widow, mother of three children, who, owing to worry on account of a daughter's bad health and final death, had been in poor health for some time. She was attended by two other physicians, who also had various counsellors, but the pathology seemed obscure to them, and the therapeutics necessarily were unsatisfactory. She was often sleepy, had a sleepy and sallow appearance, had "bad stomach" and irregular bowels; in fact, showed fair signs of the classical feature of myxedema, the description of which I will not give, as it can be found by any one willing to consult any good text-book on medicine. About six months before she consulted me an abscess gathered under her right arm, two inches below the axilla and one inch in front of the axillary line. A poultice was applied in the classical "old woman's manner," and when "ripe" (save the mark), the attending physicians pointed a bistoury at it, when it opened and flowed a long time. Finally it closed, temperature (septic) fell, and all seemed to go fairly well except that she got no strength, was always tired, had continuous trouble with her digestion and bowels; with her legs, face, back, abdomen, eyes, forehead and other places swollen, but not edematous in appearance. In this condition she fell under my care. After a few days of "diagnosing" I thought I discovered the characteristic symptoms of perinephritic abscess, with fluctuation below the right kidney. To save space and the reader much time I will refer him to Dennis' system of surgery, in fact any good work on surgery, where he will find a good description of these abscesses, as well as their pathology, and guidance for treatment. October 3 I made an incision corresponding to the lower pole of the right kidney, but got no pus, but a day later, when slowly dissecting with a blunt instrument, I was rewarded with a full flow, amounting to about six ounces of yellow, creamy pus; the "healthy pus" of our forefathers. More followed daily, but as the tendency of the wound was to close, I enlarged the incision under a Schleich injection of nirvanin and made a counter opening two inches toward the spine, introducing a drainage tube which was daily washt out with a 1-5000 bichloride solution. This tube was allowed to remain two weeks, till not another drop of pus flowed. After its withdrawal the wound soon closed. At the time of making the incision her temperature was 104.6 F., pulse rapid and feeble; drowsiness, stupor and all the signs of a dangerous toxemia, due not only to the pus, but also to the myxedema. Of course, I gave her stimulants and later tonics; quinine and iron, and gave much attention to her nourishment. Her temperature, pain, toxemia and other outward symptoms soon gave way to fair health.

* Written for the Des Moines Valley Medical Association, Ottumwa, Iowa, June 19, 1900.

Now, it seems to me to be plain that her previous abscess in front of right axilla was but another opening for this prinephritic abscess which I opened in the right loin; and being imperfectly drained, or in fact not "drained" at all, the wound of exit soon healed with plenty of residual pus in situ, which accumulated again and was treated as recited.

Recognizing her myxedemic trouble, I put her on dessicated thyroids, and later on on nuclein, with the effect that she is now getting well—fully recovering from both troubles. The thyroid was given in thirty-grain doses, divided thru the day, and thirty to forty grains of protonuclein a day in four doses.

The case is remarkable for several things. One, how severely we can have an infection (such as a perinephritic abscess is) without killing an already exhausted and enfeebled patient—no matter how poorly treated; another, how two very severe co-existing affections may be borne and recovered from, either of which is frequently fatal; and it may also be remarkt, as the last straw, that this patient has past thru a severe attack of pneumonia since recovery from the abscess and myxedema, with a temperature of 106 degrees, lasting eight hours, muttering delirium for three days, hemorrhage into the semicircular canals, followed by deafness and vertigo, all of which she has now recovered from.

HYDROCELE.

BY LEWIS SCHOOLER, M. D., LL. D., DES MOINES, IOWA.
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Hydrocele is an affection of frequent occurrence, and well calculated to produce considerable annoyance, tho not dangerous to life; one that many persons hesitate to have operated upon on account of fear of pain or injury to the organs contained in the scrotum, notwithstanding they are assured by the surgeon that the operation is painless, cure certain and general anesthesia unnecessary.

Until quite recently I was under the impression that the old iodine "injection method" was obsolete. I find, however, that all modern English, and a number of American, works on surgery recommend the injection of tincture of iodine instead of carbolic acid. Why this should be so, judging by the comparatively happy experience I have had with the carbolic acid in these cases, I do not understand, for it seems incredible to me that any other method than carbolic injection should be thought of, and the only reason I can conceive of for the preference for iodine is that the acid has not been carefully used. In my earlier experience I was not always able to get a complete cure with a single injection, as I now believe owing to two errors: first, the quantity used was too small; second, the drug was not brought into contact with the entire surface of the sac.

I now use from one to two drams, the patient remaining in the standing position until the solution is thrown into the cavity, then immediately lying down, when the scrotum is caught between the thumb and finger of either hand and elevated so that the upper portion of the sac is as thoroly treated as the lower. A little rubbing of the surfaces between the thumb and finger is now practist to insure complete contact with every portion of the serous surface and the operation is complete, and the result will be ideal.

The pure 95 per cent. solution carbolic acid in this or even larger quantities is not dangerous in these cases provided all the fluid has been withdrawn; neither is it painful. If much pain follows the procedure it is because some of the serum has been left in the scrotum.

There will be some reaction, and within a day or two the scrotum will be as large as it was previous to the operation, but it will not be painful, neither will there be any danger of the reaction getting beyond control, as is sometimes the case where iodine has been used. The patient is sometimes advised to remain in bed for twenty-four hours after the operation, but I have now reacht the conclusion that even this precaution is unnecessary. I have been convinced of this fact by the behavior of so many patients who have felt so little discomfort that they refused to obey the instructions.

Carbolic acid in concentrated solution is of itself a local anesthetic, and is absolutely unabsorbable from such surfaces, at least in toxic quantities. It is now freely used in this way in diseases of the articulations, abscesses and pus cavities, with a single precaution, that of washing away the excess with alcohol, and the method is a decided advance in surgery. Dilute solutions are diffusable, and dangerous, as well as painful. They may even produce dry gangrene of the fingers or toes where there are only slight wounds of the integument, but with just enough alcohol to dissolve the crystals no danger need be apprehended. If a considerable amount of the fluid in a hydrocele be left in the scrotum and the acid used, it may become diluted to a dangerous extent, both locally and generally.

I have neither a new nor novel method of using this substance further than suggested above, that of compelling the patient to lie down when the trocar is withdrawn.

After proper disinfection, shaving, etc., I place the patient in front of me in the standing position, thrust the small trocar and canula of an aspirating syringe into the sac; withdraw the trocar, empty the sac thoroly, leave the canula in situ, and having previously filled the aspirating syringe with the desired quantity of the drug, it is screwed on to the canula, the piston is thrust home and the canula withdrawn; and with the thumb or finger held over the pucture point the patient is laid upon his back and the kneading process accomplisht. I place a little cotton and collodion over the puncture and the process is completed.

FORMALIN AS AN ANTISEPTIC IN GENERAL SURGERY AND GYNECOLOGY.*

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When a great and new procedure is discovered and becomes popular it is usually overdone. This has been the case with antiseptics in surgery. Wounds of all kinds were washt and filled and covered with antiseptic solutions and powders of every description—often to the positive detriment of the healing process. But operators have learned that nature is the healer, and that bichloride, iodoform or any other foreign material was but a detriment which had to be gotten rid of before healing can begin. So antiseptics are now finding their true and legitimate place—that of purifying the unclean.

To-day is the day of soap-suds—both for hands and for field of operation. But even after scrubbing the hands for fifteen minutes in soap and water, followed by as strong an antiseptic as the skin will bear, they are not clean enough to be always satisfactory—sterile.

The pendulum has swung too far in favor of so-called asepsis rather than antisepsis. There is a deplorable tendency in the profession to laud asepsis and decry antisepsis. It is common to hear the remark: "I believe in aseptic surgery, but not in antiseptic surgery." Asepsis is the ideal condition, but the ideal is usually just a little beyond our reach. So long as we have dirty hands to use and infected wounds to treat, we shall have to employ antiseptics before anything approximating an aseptic condition can be obtained to start with. Therefore, I think I am safe in the assertion that we shall always be in need of an efficient antiseptic to cleanse soiled hands and infected wounds. It is the object of this paper to call the attention of the profession to an antiseptic, not altogether new, but not yet receiving the attention which its great value and superiority deserves.

I speak of formalin, the commercial name given by Schering to a 40 per cent watery solution of formic aldehyde, or formaldehyde as it is usually called. Formaldehyde is produced by the dehydration or oxidization of methylic alcohol or wood spirit. The germicidal powers of formaldehyde were discovered by Trillat in 1888. It is a gas, and in this form is now everywhere used as a practical and efficient house disinfectant. In formalin, the saturated solution of this gas, we have a practical antiseptic, applicable to the whole realm of surgery and medicine, as wide-reaching in extent, as efficient in its action, and as practical in its application as the gaseous form is to the disinfection of dwellings and fomites.

A somewhat extended use of formalin in almost every variety of cases in which antiseptics are employed, together with observation of its use in the practice of my confreres at St. Luke's Hospital (particularly that of Dr. Rustine and Dr. Ruml in their railroad surgery—a class of cases in which it is especially valuable), has convinced me that it comes nearer meeting all the requirements of a perfect disinfectant than any other substance yet employed. Its germicidal potency ranks with that of the two or three most efficient bactericides, and its inhibiting power is probably greater and more lasting than that of any of them. It is not only an antiseptic, but a deodorizer as well; and solutions of potent strength are much less irritating, both to the hands and to wounds, than any other equally efficient antiseptic of which I have any knowledge. It is not injurious to instruments, and, most important of all, it is practically innocuous. Large cavities can be freely irrigated, even the peritoneal cavity, and a considerable quantity of the solution can be allowed to remain without injury or great danger of toxic effect.

Formalin in sufficient strength coagulates albumin and hardens animal tissue. For several years its chief use was as a fixing agent in the laboratory. The mistake is generally made, in the beginning of its use as an antiseptic, of employing too strong a solution. The surface of the wound is thus hardened and the healing process retarded. This is not only harmful, but entirely unnecessary. A solution strong enough to completely inhibit the

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development of pus germs may be used to cleanse, wash out, and pack pus cavities and sinuses without interfering in the slightest degree with healthy granulation processes.

I have seen in cases of crusht arms and legs, a mass of suppuration turned into an odorless, healthy, granulating condition, almost as if by magic, by free drainage and packing with gauze saturated with a solution of formalin; and large areas of denuded bone, covered by damp gauze, protected by cotton and plaster of Paris, healed rapidly by granulation, when it seemed absurd to expect it. The explanation is that the protected gauze slowly liberates the formic aldehyde day after day in quantity sufficient to inhibit the growth of germs, but not to interfere with the process of repair.

As usually employed the solutions have been entirely too strong. It must be remembered that "formalin" is a 40 per cent solution of formaldehyde—so a one-fourth per cent solution of formaldehyde is two and a half times stronger than a one-fourth per cent solution of formalin—a distinction not always made. As formalin is the standard preparation from which our solutions are made, the percentage should always be given as of formalin and never of formaldehyde. But if one prefers to use the latter, the table I have prepared may be used—giving both formalin and formaldehyde percentages:

Working Solutions—Half oz. 4 per cent solution to 15½ oz. water, equals ⅛ per cent formalin equals one-two-thousandth formadehyde.

One oz. 4 per cent solution to 15 oz. water, equals ¼ per cent formalin equals one-one-thousandth formaldehyde.

One and one-half oz. 4 per cent solution to 14½ oz. water, equals ⅜ per cent formalin equals one six hundred and sixty-sixth formaldehyde.

Two oz. 4 per cent solution to 14 oz. water, equals ½ per cent formalin equals one five-hundredth formaldehyde.

Two and a half oz. 4 per cent solution to 13½ oz. water, equals ⅝ per cent formalin equals one four-hundredth formaldehyde.

Four oz. 4 per cent solution to 12 oz. water, equals 1 per cent formalin equals one two-hundredth and fiftieth formaldehyde.

For practical purposes the formalin solutions may be markt one-eighth per cent (1¼ parts to 1000), one-fourth per cent. (2½ parts to 1000) and one-half per cent. (5 parts to 1000)—the first and second for washing infected wounds and irrigating and packing cavities and sinuses; the third for disinfecting the hands and surface to be cut. Healthy hands may use the one-half per cent solution ad libitum, without the slightest injury. If they have been in septic material they may be washt in 1 per cent solution (10 parts of formalin to 1000 of sterilized water), but it is apt to roughen the epidermis. It is very irritating to eczematous hands, which cannot bear any strong antiseptic well.

In gynecological practice formalin is extremely useful. In cervical and vaginal operations, where the field of operation is liable not to be aseptic, a daily douche of one-eighth per cent or one-fourth per cent solution prevents all tendency to suppuration; and the residue retained in the cul-de-sac, which must be carefully washt away in the case of most antiseptics, is allowed to remain and adds to its efficacy. In curettage, the uterine cavity may be freely irrigated with a one-fourth per cent solution.

Simple and specific vaginitis and cervicitis are most successfully treated by injections of a one-fourth per cent and a one-half per cent solution; the surface being mopt at intervals with stronger solution if necessary.

To disinfect the surface for abdominal and other operations, after the usual scrubbing with soap and water, ether and alcohol, etc., a compress of gauze saturated with a one-fourth per cent solution is applied, covered with guttapercha tissue, and held in place with a binder. This will probably come nearer sterilizing the follicles of the skin than any other method.

In cases of pelvic abscess, pyosalpinx, appendicitis, etc., when purulent matter has escaped into the peritoneal cavity, it can be freely irrigated with one two-thousandth or one one-thousandth formalin in normal salt solution, and a pint or two allowed to remain with safety and advantage.

The conditions in which formalin is distinctively superior in every way to any other antiseptic is in the packing and drainage of pus cavities and sinuses, etc., the cases in which iodoform gauze has been so much employed. There is not a condition that I know of in which iodoform is used but formalin will answer the purpose better. Its inhibiting power is a hundredfold greater; it deodorizes a foul wound, whereas the other only adds a stronger and more disagreeable smell to the one already present. Iodoform is one of the feeblest antiseptics—in fact, it must be sterilized itself before it is fit to use at all; and, if used freely, is more likely to poison the patient than the microbes. There is no good reason why this "skunk" of modern surgery should not be banisht from respectable society. It has nothing better upon which to base its claim for the popularity it has so long held with the profession than the onion poultice has among the laity. Two years since I bought five yards of iodoform gauze and I have it yet, and expect it to be an abundant supply for all future use.

Another recommendation for formalin as a general antiseptic, tho much less important than its utility, yet worthy of consideration, is its cheapness. Like many other things, it is becoming too cheap. It is sold in bulk, under various names as low as $2 a gallon, but I should not recommend buying it in this way. These cheap preparations are of uncertain strength, which is a matter of great importance; and formalin has a tendency to constantly diminish in strength. It is best to get Schering's or some equally reliable make in original pint bottles. This is of uniform 40 per cent formaldehyde strength and will not deteriorate before the bottle is used.

A pint will make 50 gallons of a fourth per cent solution, which is the one generally used, at a cost of less than a cent a gallon.

A solution approximating one-fourth per cent can be made at once by adding a drachm of formalin to three pints of water.

APPENDICITIS.

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Prize Essay, Rush Medical College, 1900.

APPENDICITIS.—Latin, appendre—to hang; itis—inflammation. By appendicitis is meant an inflammation of the vermiform appendix. This may be catarrhal, ulcerative or interstitial. More broadly, it may be said to mean peritonitis of an appendicular origin. From the early days of medicine peritonitis has been described with clinical accuracy, but as the pathology was enshrowded in darkness the terms naturally sprung from a mistaken pathological origin. Previous to the sixteenth century the appendix does not appear to have been recognized. Berenger Carpi (1524) seems to have been the first to clearly recognize this little structure. In 1561 Vidus Vidius likened it to a worm and applied the qualifying term "vermiform." The freedom from invasion of the peritoneal cavity in the living subject by the surgeon appears to have been equaled only by the silence of the pathologist. It would be difficult to adduce a more convincing illustration of the pathological ignorance of the time than that afforded by the writings of Sir Astley Cooper, who as late as 1839, said, in giving directions for closing accidental incised wounds of the abdomen: "In the treatment of these wounds it is best to make the interrupted suture. The needle should penetrate the skin and the muscle, but not the peritoneum. If the muscle be not included in the ligature a hernia is sure afterwards to form, and if the thread is introduced thru the peritoneum it adds much to the danger of the abdominal inflammation."

The first case of perforated vermiform appendix was recorded by M. Mostinier in 1759 and was caused by a pin (Journal of Med. and Surg. and Pharmacy, Paris, May 11), Parker reported a case in 1812, Villermay in 1824, Golbeck in 1830. In an article on "Inflammation of the Cecuni," John Burke speaks of ulceration of the appendix set up by foreign bodies. Robebowsky in 1843 in his Pathological Anatomy was the first to recognize "Simple Catarrh of the Appendix." Copenhagen in 1880 was the first to deny positively the existence of such a disease as typhlitis, but strongly advocated the vermiform appendix as the seat of the disease. Thus we see that peritonitis gradually emerged from the pathological gloom and took its place as a distinct disease, but the knowledge of its essential nature remained a mystery until recent years, when as the Indian folded his tent and stole away before the advance of civilization, so the mystery that enshrouded peritonitis has been dispelled by the advances made in pathology and bacteriology by Parker, Sands, Senn, McBurney, Treves, Talamon, Fitz and a host of other surgeons, until to-day we know that it is an infectious disease, that the appendix is more frequently the focus of infection than any other part of the intestinal tract.

NORMAL ANATOMY.—Springing from the rear of the cecum towards its inner aspect, is a slender tube of rudimentary gut, called the vermiform appendix. It is about as thick as a lead pencil, its cavity communicating with the cecum by a small orifice. This appendic-cecal aperture has been described by some as possessing a valve-like projection of mucous membrane, often spoken of as Gerlachs' valve. What is of more importance than any valve, real or imaginary, is the true size of the lumen which varies from a mere pinhole opening to that sufficient to admit a No. 7 catheter (English scale). It may be represented by a mere stump, but generally measures about ⅞ c. m., occasionally increast to 10-12 c. m., and to find an appendix 14-16 c. m. at an autopsy is not rare. The position of the appendix itself varies considerably, possibly it may be said to occupy a normal position when it is found behind the ileum and its mesentery, its tip pointing upwards and towards the spleen. The base is constant and would be at the lowest part of the cecum in the adult as in the fetus, but for the bulging of the front part of the lat-

ter downward and outward, a change which brings the opening of the appendix behind and toward the middle line of the body. Almost all of the abdominal organs have the appendix for a neighbor at times. It may be found in contact with the sigmoid, rectum, bladder, and in women it frequently assumes the location of the uterus or its appendages and may give rise to much diagnostic confusion when these parts are inflamed. It may be found to have entered the right inguinal or femoral canal.

The blood supply is derived from a branch of the ileo-colic artery, which courses along the free border of its meso-appendix.

In the absence of the mesentery the vessels will be found beneath the perintoneal coat at the mesenteric border. In the female there is frequently a branch from the ovarian artery. In a majority of cases the appendix has a mesentery of its own; but when present this is subject to wide variation, sometimes extending to the tip, sometimes so short as to appear to be absent. Because of its shortening the appendix may be twisted on itself.

The histological structure reveals an interesting point in intestinal anatomy. The least variable part is without doubt the serous coat which is continuous with that of the cecum. The muscular layer is very feeble. The most noticeable feature is the large amount of lymphoid tissue which has been compared to that found in the tonsils.

If the appendix has any definite or special function the physiologist has not yet clearly indicated it. It is evidently a useless relic, and is the least constant part of the alimentary canal. Some have suggested that its glandular secretion may be of some use in lubricating the adjacent cecum where the feces are apt to accumulate. It would seem that its anatomical elimination was being hastened by pathological troubles. Darwin in his "Descent of Man" writes: "It appears as if in consequence of changed diet and habits the cecum had become much shortened in various animals. The vermiform appendix being left as a rudiment of the shortened part. That it is a rudiment we may infer from its small size and variability."

ETIOLOGY.—The appendix is the weakest link in the alimentary chain. No one factor alone can be held accountable for the development of all cases of appendicitis. If the appendix were not a closed tube—but instead had some reliable drainage, there is no doubt that the number of appendicitis cases would make only a small percentage of abdominal troubles of to-day. The causes can best be considered as predisposing and exciting.

PREDISPOSING CAUSES. (1.) **Age.—There is no question but** that age exerts considerable influence upon the etiology. Appendicitis is rarely met with in the extremes of life. Cases are on record where it was found in children from seven weeks to a year old, but these are rare. On the other hand, cases are seldom seen in persons after sixty. The number of cases increase at the seventh year, and it is common after ten. In a report of 517 cases in a leading Montreal hospital the condition was found most common between the ages of 20 and 30.

(2.) Sex.—Altho no markt difference in the anatomical structure between the male and female appendix has been noticed except in the variation in the blood supply, yet trustworthy observers are agreed that far more cases occur in males than females. Perhaps this may be due to a failure in correct diagnosis because in women the appendix is frequently a pelvic structure and hence its disease is liable to be mistaken for some ailment peculiar to women.

(3.) Habit and Occupation.—Any occupation or exertion that requires unusual strain upon the abdominal muscles may be a predisposing factor. Appendicitis has been noticed to occur in persons engaged in vigorous athletics, especially in those sports producing a violent contraction of the psoas and iliacus muscles. Numerous cases are reported where bicycle riding was supposed to be a cause.

(4.) Constipation and Diarrhea.—Diet of indigestible and of too highly seasoned foods may cause constipation or diarrhea or a catarrhal condition of the mucous membrane.

(5.) Infectious Diseases.—These, but especially ulceration of the cecum caused by tuberculosis, typhoid fever and syphilis, may extend to the appendix, but the ulcer may be primarily in the appendix.

(6.) Relapsing Appendicitis.—No one is able to say positively that when a person has suffered from an attack of appendicitis he may not have another at any time while the appendix remains. However, as occasionally happens, the lumen may be gradually obliterated, producing "appendicitis obliterans."

(7.) Heredity.—Heredity seems to act as a predisposing cause in constitutions with an arthritic diathesis. Rheumatism may act as an etiological factor, the constitutional intoxication manifesting itself by an inflammation of the lymph glands. Yeo, of London, says: "There is no mucous membrane or serous tissue exempt from gouty or rheumatic inflammation."

EXCITING CAUSES. (1.) **Foreign bodies: Among the laymen the prevailing idea as to he cause for appendicitis is laid at the** door of the classical grape seed, cherry pit, et cetera, which has become lodged in this little pocket. But they must be forgiven for they no doubt received this idea from the medical profession, as it has been only a few years ago that about 40 per cent of the cases were thought by physicians themselves to be due to these causes. During the past fifteen years the opinions of the medical men have changed greatly. To-day the pendulum has swung back and there are those who believe that foreign bodies (aside from fecal concretions) rarely if ever cause appendicitis. In an interesting resume of his studies of 1,400 fatal cases of appendicitis collected by himself, J. F. Mitchell believes that 7 per cent contained foreign bodies.

(2.) Trauma.—Traumatism, such as blows, wrestling, falls, etc., may provoke a smoldering infection into an active outbreak.

(3.) Cecitis.—"Just as a catarrhal condition of the biliary passages can be provoked by an extension of inflammation from the duodenum to the ductus biliaris communis, causing tumefaction of the mucous membrane and even jaundice, so inflammation of the cecum may extend to mucous membrane of the appendix, producing a catarrhal inflammation." The appendix of itself is but little more liable to disease than other intestinal structures, but its chances of recuperation are so small that its pathological margin is very narrow. It is beset from within by contraction of its mesentary and thus interfering with its nutrition and drainage.

(4.) Bacteria.—It has been repeatedly demonstrated that the bacillus coli communis exists normally in the human body and is said to be the most abundant and most constant of the bacteria found in the healthy body. The bowel is its natural habitat, it being found along the whole course of the alimentary canal. Perhaps the most noteworthy feature about this microorganism is that it varies greatly in its virulency, becoming virulent even in obstruction caused by prolonged constipation. Virulency also follows catarrhal, vascular and nervous nutritive disturbances. The bacteria may become the nucleus about which are deposited successive layers of mucus, desquamated epithelial cells and leucocytes. The micro-organisms will invade this pathological soil, will increase as "sands of the sea," will infiltrate, devastate and penetrate the walls. These conditions will arise, no matter what is done and disease will follow.

Disease, however, is not alone due to the virulency of the determining causes, no matter what they are, but is dependent to a considerable degree upon the predisposition of the individual, upon the power of resistance of the parts attackt.

The factors that operate to make the appendix less resistant than other portions of the intestinal tract to the invasion of the bacteria, may be mentioned blood supply, nerve supply, and poor drainage producing a locus minoris resistentiae.

Among other bacteria that are found in the diseased appendix may be mentioned the staphylococcus pyogenes albus, streptococcus pyogenes, bacillus prodigiosus, micrococcus lanceolatus of Frankel. In a good culture medium the bacilli coli communis proliferate most luxuriantly and it can not be denied that the contents of the appendix furnish an excellent medium in which to cultivate a virulent growth. As the bacillus coli communis increases so rapidly it outgrows the other bacteria and so plays an important role in the bacterial origin of appendicitis.

PATHOLOGY.—The pathology of the appendix does not differ essentially from that of other portions of the alimentary canal, but as it is a vestigiary organ it possesses a greater tendency to pathological conditions. Owing to its glandular structure, it present a certain analogy to the tonsil and its disorders. The pathological anatomy of the appendix varies in different cases. The inflammatory changes vary in degree and hence may be divided into catarrhal, gangrenous or necrotic and interstitial.

(1.) Catarrhal.—There is a retention of the contents, which are more or less of a muco-purulent character, caused by a swelling of the mucosa and solitary glands and filling of the paravascular spaces in the muscular and subserous coats by leucocytes. (Tenyer.) The inflammation may subside, the lumen of the appendix become patent and recovery with a normal appendix take place. It may lead to thickening. The mucosa and serous coats are rapidly involved, an exudate is thrown out and bacteria penetrate the walls.

(2.) Gangrenous.—Here a fibrinous peritonitis over the adjacent intestines develops with protecting adhesions or perforation without protective adhesions may take place. If, however, thru previous inflammation close adhesions have united the appendix and peritoneum both the organ and its envelop may be perforated simultaneously. But if adhesions be strong enough to effectually ward off general infection of the peritoneum an extraperitoneal abscess forms, which may open externally above Poupart's ligament, into small intestine, bladder, rectum, portal

vein, iliac artery or vagina. If no adhesions between the appendix and peritoneum have been formed a suppurative peritonitis is produced. Loops of intestines adhere together, thus trying to protect the surrounding parts. If this does not occur the septic material invades the peritoneal cavity and gives rise to a diffuse and fatal peritonitis.

(3.) Interstitial.—In this class of cases the coats are involved later, rarely de novo, the infection traveling along the lymphatics in the interior walls. Connective tissue changes are brought about so that oftentimes a chronic thickening is produced. Typhoid, tubercular and actinomycotic ulcers, tho rare, have been observed.

THE VALUE OF LEUCOCYTE COUNT.—In the first place the leucocyte count is an aid to diagnosis. Second, as a means of determining the character of the inflammation, whether catarrhal or ulcerative, and, third, as a help to the physician in following the course of the appendicitis from day to day, whether it is extending and involving new areas or receding and going on to resolution.

As an aid to diagnosis the counting of the white blood-cells is of great value. Appendicitis may be confounded with typhoid fever, gall-stones, renal colic, intestinal colic, acute gastritis, uremia, etc. Between appendicitis and uncomplicated typhoid the white count is diagnostic almost to an exclusive extent. In case of appendicitis there is almost always an increase in the count, while in typhoid the count is normal, or perhaps diminisht. The same is true in case of gall-stones uncomplicated; of floating kidney, of intestinal obstruction and of acute gastritis.

CHARACTER OF INFLAMMATION.—All cases of appendicitis in which there is a finding of 14,000 white cells are suppurative. This count can determine pus in at least 80 per cent of all cases. From the history of cases it is found that little can be determined by the white-count in regard to whether there is merely a catarrhal inflammation or one on the verge of perforation. Cabot reports two cases bearing on this point. "In one a count of 12,000 was made, operation was performed and a gangrenous appendix was encountered. In the other a white count of only 9,000 was recorded, operation was performed and a gangrenous appendix with a general suppurative peritonitis was met with. As both of these cases bordered closely upon the count accompanying a catarrhal appendix, it would seem that a white count is of no value in discriminating between a catarrhal and gangrenous appendix. Further, from a record of eleven cases in which the leucocyte count varies from 7,000 to 30,000, but in which there was no operation, but recovery occurred, it follows that the white count beyond which recovery without operation is possible can not be definitely fixt; and that many cases in which the appendix is septic in character, recover without operation."

As an interpreter of the course of the inflammation an increasing leucocytosis means an advancing process while a decreasing white-count signifies a receding of the inflammation and progress toward resolution or inflammatory localization. In that class of cases in which the temperature is low and the general clinical symptoms give little evidence as to the course the disease is pursuing, the leucocyte count is a valuable aid to the clinician. Cabot records a case bearing on this point.

"Patient entered with vomiting and localized pain and tenderness in the right abdomen. The first count gave 15,000, three days later 22,000, yet the patient seemed better and improving. The next day the white-count was 35,000, the bowels moved and the patient had no fever, yet the white count plainly indicated a severe septic infection. On this indication alone operation was performed and a large amount of pus was evacuated." Cabot also reports four cases of general purulent peritonitis without leucocytosis. In spite of these discouraging reports the value of leucocyte-count has been demonstrated in this disease more than in any other.

SYMPTOMS.—The symptoms in a mild case of catarrhal appendicitis can not at present with certainty be distinguisht from those marking the onset of a case of the gravest type. Whether catarrhal or ulcerative, the attack presents itself about the same, usually in a previously healthy person, but when present in a patient physically and mentally below par, the symptoms appear to have an exaggerated degree of seriousness. Simple catarrhal appendicitis is often unattended by any symptom whatever. Doubtless many cases are overlookt because of the extreme mildness of the symptoms. These are often attributed to intestinal indigestion or to "cold," etc., to which the patient pays little attention unless he displays unusual susceptibility. The first attack in most cases is a mild one. The supervention of a general peritonitis, howsoever mild, is, however, usually attended by unmistakable symptoms. The characteristic features of the invasion are sudden pain in the abdomen, tenderness at McBurney's point, fever which generally is slight, circumscribed muscular rigidity and gastric disturbances. If in the absence of hernia such a group of symptoms were preceded by certain prodromes, as impaired appetite, nausea, constipation or diarrhea, it would indicate the existence of appendicitis.

Pain.—Pain is invariably the first symptom, varying in intensity from a mere feeling of soreness and distress, to that of most agonizing suffering. The location is not constant at first. It may be anywhere in the abdomen, frequently in the neighborhood of the umbilicus. Usually within twenty-four hours, in one-half of the cases the pain settles in the right iliac region, frequently localized at a spot one to two inches from the anterior superior spine of the ileum towards the umbilicus. Shrady says: "Analysis of symptoms in 300 recorded cases shows that the most important symptom is pain in the right iliac fossa. McBurney's point is important if associated with other symptoms."

Fixt tenderness is practically constant, on pressure over McBurney's point.*

The seat of tenderness may rarely be found at other points, depending on the location of the appendix.

Fever.—The exacerbation at onset may reach 102-103 degrees F., after which it gradually falls, reaching normal in from five to seven days, in favorable cases which terminate in resolution. The degree of fever is unreliable as a criterion of the severity of the case. Too much stress cannot be laid upon the fact that there may be a gangrenous appendix in presence of normal temperature. The pulse rate is somewhat higher than the temperature would lead one to suspect. Sometimes, however, the pulse remains at 80 to 90 per minute.

Gastric Disturbances.—Nausea and vomiting are present in the majority of cases, but it does not furnish information as to the seriousness of the case. The kind of vomitus and the way in which it is vomited are of importance. Easy and constant regurgitation, for example, is more serious than occasional violent retching; dark colored vomitus is more serious than biliary. In favorable cases it rarely persists beyond the second day. Constipation and diarrhea alternate, but either symptom may be a prominent one during the entire course of the attack.

Dunlafay has noted testicular pain in attacks of appendicitis. Three times he has seen cases accompanied by testicular retraction. The important part was that the kidney was not painful. In nephritic colic the kidney is always more or less painful. The pain comes on and ceases suddenly. While in appendicitis the pain increases and abates gradually.

Various other symptoms occasionally occur, such as tenderness in lumbar region, dorsal decubitus with legs flext on abdomen, difficulty and frequency of urination. General symptoms such as profuse perspiration, lividity of the features, cold extremities are of common occurrence.

TERMINATION.—Recovery is the rule in a mild case. Then even the first attack may be of a severe type and develop perforation with the formation of an abscess, or peritonitis and death.

Fitz says that from all available data it would appear that in more than one-half of the cases the course is light and favorable. In a case that is proceeding to recovery the symptoms continue for two or three days and the patient gradually recovers. In others a slight fever may exist and convalescence may not be establisht for from two days to three weeks.

In a more severe case perforation may occur; when on the third day after the onset of the symptoms there is a localized superficial edema, indicating deep suppuration, and a doughy mass is felt at the seat of the appendix, we may feel sure that perforation into a cavity bound by adhesions has taken place. The pulse, temperature and pain may decline, marking the occurrence of effusion which may be merely a deceptive, deadly calm. The appendix being deeply seated behind the cecum and below the mesentery of the ileum, abscess about it may continue for a considerable length of time without the appearance of tumor in the rigid iliac fossa.

When the symptoms are markt and a tumor can not be felt, perforation has doubtless taken place before adhesions were sufficiently perfect to protect the peritoneal cavity. If perforation has occurred early, i. e., before adhesions are formed there is often a chill, vomiting, shock more or less profound; diffuse instead of localized pain, pulse is accelerated and temperature increast. Urine is dark, scanty and high specific gravity. Keen says: "Suddenness of attack with severe pain and vomiting followed by remission of symptoms are the diagnostic signs of perforation.

COMPLICATIONS AND SEQUELAE.—The most important complication is obstruction of the bowels, the direct consequence of constriction by adhesions, developt in the course of peritonitis, and is frequently a cause of death. Hepatic abscess from pyophlebitis may be found due to thrombosis and embolism of the portal vein. Pyemic abscess may be detected elsewhere in the system, as the brain and lungs. Fecal, bladder and umbilical fistulae have remained in a number of cases and necessitated anoth-

* McBurney's point is a spot about midway between the anterior, superior spinous process of the ilium and the umbilicus.

er operation. Death has been caused by hemorrhage from the necrosis of the iliac vessels.

RELAPSING FORMS.—This term is applied to cases of appendicitis, which occur after the first attack. The cases that recover with the persistence of an induration or tumor mass are most prone to relapse. Overwork or disturbance of digestion produce pain and sensitiveness in the region of the appendix, compelling the patient to remain quiet for a day or two. In 23 per cent of the cases observed by Hawkins there had been a previous attack. Tolamon has stated that chronic appendicitis is rather an infirmity than a malady menacing to life. The patient is more or less an invalid. The more frequent the recurrence the more enfeebled the patient becomes. He is prevented from work; debarred from the pleasure and profits of travel thru fear of an attack of pain and its possibilities, when at a distance from medical and surgical aid. He is often nervous and irritable and becomes self-centered and timid.

DIAGNOSIS.—Every suspected case of appendicitis must be carefully subjected to a systematic and thoro examination. During the examination, gentle manipulation is necessary, lest an abscess be present and the adhesions be delicate and unable to stand the traction or pressure. The external examination should be followed by an examination per rectum or vagina. Appendicitis is by far the most frequent inflammatory condition of the abdomen. We have been taught that if we find sudden onset of pain, vomiting, elevation of temperature, accelerated pulse, right iliac tenderness, tense, right rectus muscle, that we have an unmistakable case of appendicitis. The prominence of one or more symptoms may blur the details, yet the general outline of the picture can usually be made out. The epigastric pain is reflex only, but by manual examination of the abdomen the seat of the lesion can be ascertained. Vomiting is nearly always present in the early part of the attack. One of the most startling features of the disease is the treacherous behavior of the pulse and temperature. None of the cases should be past over in a heedless fashion. Osler relates a case of an acutely distended gall-bladder almost on the point of perforation, being mistaken for appendicitis.

Typhoid fever has a sluggish onset; appendicitis a sudden onset. In typhoid we find a tolerably uniform pulse and temperature curve; appendicitis has none. Typhoid patients complain of prostration, a patient suffering with appendicitis complains of pain. Typhoid patients lie flat on the back while in appendcitis we note the characteristic flexion of the thigh upon the abdomen.

Inflammation of the uterus and appendages are at times confused with appendicitis, but the history together with vaginal and rectal examination under an anesthetic, in case of doubt, may enable the practitioner to make a diagnosis.

Acute intestinal obstruction is characterized by total absence of bowel movement, incessant vomiting, growing in violence until stercoraceous vomiting is observed.

In renal colic the pain follows the course of the ureter, the urine may be bloody or diminisht and the bladder is often irritable. Hysteria may simulate very closely a case of appendicitis.

Tumors.—The neoplasms which most frequently occur in the intestines are found in subjects beyond forty years. The tumor is slow in progress and patient may have a cachetic face.

Patients have been admitted to the Cook County Hospital with a diagnosis of appendicitis and instructions to operate, when after a careful examination it was found that the patient was suffering with pneumonia of lower right lobe with diaphragmatic pleurisy.

With a clear history of renal disease the diagnosis of nephrolithiasis is easily made, but when this history is lacking the differentiation can not be made except by exploratory incision.

Among other diseases from which a differentiation must be made may be mentioned, acute gastritis, acute tubercular peritonitis, hip-joint disease, Dietl's crisis, acute hemorrhagic pancreatitis, mucous colitis with spread of inflammation behind the colon and peritoneum extending into the psoas muscle, neuralgic pains along the lower lumbar nerves, gastric crisis in tabes dorsalis, perforation of the stomach, mesenteric thrombosis and embolism.

PROGNOSIS.—A guarded prognosis must always be given, as appendicitis is such a treacherous disease, yet it is well to recognize that a large proportion of the cases recover. The sudden subsidence of pain or its quick reappearance are symptoms that are full of danger. When it is known that a pint of foul pus can be diffused over the abdominal contents and remain for hours without sending the temperature higher than 99 degrees F., it shows how useless a thermometer may be. Cases of catarrhal appendicitis, with adhesive peritonitis, almost invariably get well. Cases in which the invasion of the general peritoneal cavity by septic material has occurred, usually end fatally.

Hawkins records the following: Peritonitis limited to the right iliac fossa and not proceeding to formation of pus, 190 cases, no death; peritonitis similarly localized, but ending in formation of pus (perityphlitic abscess), 38 cases with 10 deaths; general peritonitis, 36 cases, with 27 deaths, giving a total mortality of 14 per cent; 59 of the 264 patients had had one or more previous attacks; 45 had "simple perityphlitis," and all recovered. Of 7 with abscess formation, 3 died; of 7 with general peritonitis, 3 died.

Removal of appendix during attack gives, in the hands of skillful operators, 19.7 per cent mortality; incision and drainage of abscess, 18.18 per cent mortality. The statistics of individual early operations give a much more favorable showing, and the per cent of deaths in the hands of good surgeons is now very much lower.

TREATMENT.—Of all the questions debated by the physician and surgeon none has been entered into with greater fervor than has that of appendicitis. Both parties have been honest in their convictions and both thought that they were in the right. And while great progress has been made in the last few years in the treatment of appendicitis, yet the point has not been reacht where there is unanimity of opinion among surgeons and physicians as to the best method of treatment of acute appendicitis. Nearly all agree that every case of relapsing appendicitis should be operated upon and some advise operation after one attack provided the diagnosis is free from doubt. The same agreement is not found in the matter of acute cases here, there being found two well-defined groups. The one, among whom may be mentioned Deaver and Murphy, advising operations in all cases as soon as diagnosis is made—the other advocating the policy of careful watching of the individual case; treating many by means of rest, ice to abdomen, laxatives and by these means tiding the majority over an acute attack to have the appendix removed with greater safety during the quiescent or afebrile period. "They lay great emphasis on the very important point, namely, the difference between advocating operation at the beginning of the disease and when the diagnosis is made. The rule of operating in the very beginning in every case is doubtless a good one, yet it by no means follows that immediate operation is demanded in every case as soon as diagnosis of appendicitis is made, for the reason that when the patient comes to the physician for treatment or surgeon for operation, the conditions favorable to an early operation may have given place to others, making operation far more dangerous than the expectant treatment." They believe that almost every case seen after the symptoms have fully develop require interference at some time during the attack, but that the time is invariable as soon as the diagnosis is made is a proposition open to serious doubt. They would not operate on a patient in whom the severe attack is rapidly subsiding as long as the symptoms improve; any increase in the severity of the symptoms after a temporary improvement invariably demands an operation.

MEDICAL TREATMENT.—Medical treatment is indicated when the signs of abscess formation are not present. Absolute rest is imperative and only liquid food should be permitted. Brisk cathartics are not indicated, but rather salines and warm enemata. For the pain hot applications either in the form of hot cloths, hot water bottle or mustard plaster may be applied to the cecal region. Opium if given at the onset masks the priceless landmarks of the treacherous disease, where their manifestation would be of the highest practical value to the patient. The opium allays the pain, but in doing so, paralyzes the nervous tone and the resistance of the tissues to microbic proliferation. However, many good physicians recommend and use opium, among them may be mentioned Ludwig Herzay, who says: "Opium should be used for the reason that it quiets peristalsis and is therefore useful in permitting the walling off of the abscess and in preventing rupture of the adhesions that may already have formed. The object being to procure complete rest until the attack subsides—then an operation loses its terror."

Da Costa says a large number of catarrhal cases are cured by medical treatment. Aconite may be given for restlessness, belladonna for full, bounding pulse (for great bloating and rumbling of gas, a rectal tube may be inserted high up into the bowels). In case of chill, hot applications, careful elimination, alcohol and strychnine.

In many cases decided improvement is manifested in about three days, at such a time the patient will ask for solid food; in fact, the appetite is a troublesome factor, but a week or ten days must elapse before the ingestion of solid food is permissable.

INDICATIONS FOR EARLY OPERATION.—"The doctor of a large practice has learned to know appendicitis and to fear it, but he and he only probably appreciates fully the large percentage of cases that can be guided to a successful issue without the use of the knife. At the same time he concedes that an operative procedure in competent hands, before inflammation has reacht the serous coat is in itself one involving very little risk,

while the continuation of the pathological processes in many cases greatly jeopardize the life of the patient."

Among the dangerous symptoms that he has learned to recognize and in which operation is indicated may be mentioned: A continuously frequent or progressively accelerated pulse. When pain is sudden, severe, progressive and possibly chill. Increase of temperature associated with an acceleration of pulse. Incessant and uncontrollable vomiting. In general it may be said that if tenderness or pressure increase, if the pulse accelerate, the temperature rise or abdominal distention augment with increase in size or fluctuation of the tumor, operation is to be considered almost inevitable, and should be hastened should there be an acute onset of pain.

Richardson and Brewster, after reviewing their records of 756 cases, came to the conclusion that the question of operative interference is not so simple as it first appears; that the greater one's experience in all cases of acute cases, the greater the number in which there will be serious doubts as to the advisability of interfering as soon as diagnosis is made. After a temporary improvement an operation is demanded. In many successful operative cases the interference was postponed from day to day until it was clear that recovery without operation was not likely to occur. In some cases a very few of the operations proved fatal. In others, the patient after delay died suddenly without relief. Operation should have been performed in a certain number of these cases, tho on the other hand operation was performed on several occasions where subsequent developments showed that it would have been better policy to wait.

According to Richardson the method of simple drainage is advisable in many cases of long standing—say a week—in which there is an abscess with firm, thick walls. In addition to this class of cases he would employ it in other localized collections, as soon as the patient's condition makes it appear unwise to attempt a prolonged search for the appendix.

The reasons given for employing this method in these cases are that recovery nearly always follows, making it possible to perform with perfect safety a second operation in which the appendix can be removed, and that the ventral hernia, which is so likely to follow operation in the acute stage, may be avoided.

In regard to circumscribed peritonitis and abscess, all will agree that the cases of abscess should be opened and drained. Most surgeons believe that in cases of localized peritonitis no attempt should be made to separate the adhesions for the simple purpose of removing the appendix. The objection to simple drainage without the separation of the adhesions lies in the possible existence of other pus cavities; yet if a vaginal or rectal examination be made after the draining of the abscess the existence of other pockets may be detected. However, if for no other reason, the low mortality in cases of circumscribed abscess and the perfectly satisfactory permanent results that have followed simple incision and drainage are sufficient grounds for limiting the operation to the cavity itself.

SURGICAL TREATMENT OF LOCALIZED ABSCESS.—In a localized peritonitis of appendicular origin, in which there is an adhesion to the abdominal wall, the incision should be made thru the most dependent or prominent part of the tumor. If the abscess is retro-cecal and is very large, extending to the flank, drainage thru the flank should be used. In other cases it may be necessary to drain the cavities thru the vagina or rectum, but this method should not be resorted to unless the abscess is pointing downward.

In operating on these localized abscesses every effort must be directed against contaminating the healthy tissues. An incision long enough to expose the tumor freely should be made, but before opening the abscess it should be walled off with gauze. After thoro evacuation and irrigation a rubber tube and gauze is placed in the bottom of the cavity, the gauze being removed at the end of 48 hours, and at the end of two days more the tube is removed and wound brought together by means of the bloodless suture. It is impossible to say when a patient is cured of iliac abscess, because the fact that he has remained free from recurrence for two or three years is no guarantee that he may not have a return of the disease many years later. The opening of the periappendicular abscess by no means assures the permanent obliteration of the appendix and complete cure. Yet it enables one in most cases to operate during the quiescent period under far better conditions with greatly decreast risk. Roux, of Lausanne, says a patient should not consider himself cured until he has his appendix in his pocket.

METHOD OF OPENING THE ABDOMEN.—McBurney recommends that the skin incision, about four inches long, should cross a line drawn from the anterior iliac spine to the umbilicus, nearly at right angles, about one inch from the iliac spine, and so situated that its upper third lies above that line. The integument, superficial fascia, and aponeurotic structures are divided with the knife, but the muscular fibers of the external oblique are separated in the direction of the fibers with blunt instruments, preferably a Kocher director. The sheath of the internal oblique is incised and separated in the direction of its fibers. Thus a wound is produced at whose edges are muscular fibers running in different directions. The edges are now retracted, the transversalis fascia being incised, the peritoneum presents, the incision into which must be made with great caution for fear of incising the underlying intestines. It is a good plan to attach two pair of artery forceps to the edges of the peritoneum so as to prevent its retraction. The cecum generally presents itself, the longitudinal bands of which are followed to the base of the appendix. A ligature is tied about its artery and appendix is removed.

The stump may be cauterized with pure carbolic acid or the thermocautery, and buried by three or more Lembert sutures of fine silk, which include the serous and muscular coats of the cecum on each side. Inversion of the stump is sometimes practist. A small hot pad is introduced to hold the bowels and omentum back. The peritoneum is first sewed up, a very few stiches sufficing, and as it is closed the pad is gradually withdrawn, a pair of forceps being introduced to hold the omentum back. The internal oblique and transversalis are brought together with a few sutures. The external oblique is next sewed up with catgut, which leaves the superficial fascia, a vascular tissue beneath the scar. The integument is united with horse hair, the wound is covered with a small strip of gauze and sealed with collodion about which is put a large dry dressing.

AFTER TREATMENT.—Teaspoonful doses of water are given for the next twenty-four hours, followed by a liquid diet for several days. If by the third day the bowels have not moved a warm enema of soap and water and glycerine may be given. If pain is severe, morphine may be given. The stitches are best removed about the tenth day. Patient may be permitted to sit up about the fifteenth day, and should wear an abdominal supporter for at least a month after the operation.

VAGINAL MENSTRUATION.*

BY E. E. DORR, M. D., DES MOINES, IOWA.
Editor Iowa Medical Journal.

I find, in looking over the literature of hysterectomy, very little bearing on the subject of vaginal menstruation. The other sequelae of hysterectomy are mentioned in many details, but there seems to be a noticeable absence of any full reports of cases or remarks upon its occurrence in works on the subject. The general profession is not, perhaps, enough interested to justify the work of a specialist in making a complete report, and the specialists possibly prefer to keep in their own possession facts that will be of most advantage to them personally. An exception is Doctor Joseph Eastman, of Indianapolis, who, in discussing one of the papers at the meeting of the Western Surgical and Gynecological Society mentioned vaginal menstruation as one of the sequelae of hysterectomy. Having found little regarding it, and feeling that it deserves mention, I have added my experience to the cases already recorded.

The general practitioner when called upon to decide the necessity of an operation does so without fully considering in many cases the whole future of his patient, but bases his decision on the report of similar cases that have been operated and lived, not (I think), taking into consideration all the sequelae following operations of this class; therefore, I am of the opinion that an injustice is frequently done, both to the patient and to the operator. The reason that knowledge of post-operative conditions is so little known is probably dependent upon two cases: First—in making a complete report of post operative conditions the surgeon would have to tell many things he would rather keep to himself because it would not aid his practice in this line; second, because the reports made are chosen and do not cover the broad field, but are given to illustrate some pet operation or because the case alone with the conditions that follow are in themselves of sufficient interest.

I find vaginal menstruation mentioned as a suggestion or a theory, but so far have not found a satisfactory article. I note in Gould and Pyle, under "Anomalies of Menstruation," that they refer to report of this sort of menstruation by Storer, Clay and Tait, and say that it is attributed to incomplete removal of the ovaries and tubes, but add that at post-mortem examination the operations were found to have been complete. I think I can do no better than quote Kelly on "Menstruation following operations on the pelvic organs," where he says: "During the period when the tubes and ovaries were removed on account of inflammatory disease, menstruation not infrequently persisted, either appearing at the usual time or as an irregular uterine hemorrhage; but since it has been the rule to remove the uterus with the tubes and ovaries in all cases where it is necessary to remove the appendages the cessation of the menstrual function has in most cases been immediate and absolute. I know of two cases of persistent cervical menstruation after supra-vaginal amputation of

* Read before the Polk County Medical Society, Des Moines, Iowa, June 5, 1900.

uterus, tubes and ovaries—one my own. Various reasons were wont to be assigned for a regular persistance of menstruation, but it is probable that in every instance some ovarian tissue is left." Here you will see that Kelly presumes just what Gould and Pyle claims had been disproved by autopsy in the cases before mentioned.

Why I should have had in my small practice two cases of vaginal menstruation following the removal of the uterus and appendages, while Kelly in his extended practice should have had but one, I am at a loss to know. The effect of the removal of the uterus and its appendages is to bring about the climatrix and the nervous and psychic conditions that follow the operation will compare favorably with those symptoms found in the same class of women at the change of life. It is a peculiar experience which we frequently have of finding the very reverse true of a theory laid down and defended by the most prominent surgeons. It occurred in my practice that a case operated on by Beatty and told that both ovaries had been removed, did not menstruate during her twelve or fourteen years of life following the operation, and yet had severe epistaxis a number of times a year. On autopsy we found the uterus and left ovary in healthy condition. It occurred in the practice of one of my best friends that a woman 42 years old had a vaginal hysterectomy performed. The woman was told that both ovaries had been removed; she menstruated eight or ten times in the next four years. As the operation had been done for carcinoma of cervix and it began to recur shortly after, it is not unlikely both my friend and the patient attributed the hemorrhage to this cause. Post-mortem showed one ovary and tube remaining.

The two cases I have to report are interesting to me, for the reason that both were young women and as unlike in physical development and temperament as two persons could easily be.

One was a woman 33 years old, weighing 186 pounds, 5 feet 4 or 5 inches tall, foreign birth and raising, rather phlegmatic, neat as to appearance and the mother of ten children. The other was a young woman 28 years old, weight about 115 pounds, never married, despondent, unhappy (made so by pain in the pelvic region). On the first we did a vaginal hysterectomy, removing uterus, both tubes and ovaries (operated in March, 1899.) Between Xmas and New Years following, or nine months after operation, she had a tremendous epistaxis and her friends and the physician attending were fearful of the outcome. On February 4, 1900, she sent for me, much alarmed that she was having hemorrhage from the vagina. I made an examination and finding nothing except a deeply congested mucous membrane concluded it was an anomaly of menstruation. I have no record of her menstruating in March, but on April 2 she menstruated again, and again on May 6 and again on June 5.

She had gained in weight fourteen pounds and now weighs 200 even. At the beginning of her menstruations she suffered with extreme backache, referred to the lower lumbar region, and pain in left thigh and legs and in right thigh, loss of sleep and appetite, the noise of the children annoys her excessively at these times. These symptoms last a week, after which until the next menstrual time she is quite cheerful.

The other case was operated by the abdominal method and the uterus amputated at the cervical neck. Two years later she had her first menstruation and it was very little—she was regular for three times—then skipt two months—regular three months and has now skipt two months, which brings her history up to date.

THE RESPONSIBILITY OF THE PHYSICIAN IN THE CAUSATION OF A HIGH DEATH-RATE IN CANCER.

BY D. C. BROCKMAN, A. M., M. D., OTTUMWA, IOWA.

When doctors are called to account they will find they are charged with many more sins of omission to make diagnosis than of commission of errors in thereapeutics. The weak point in our profession to-day, as it always has been, is in diagnosis. Almost any one can outline a rational plan of treatment if he knows what is the matter.

My object in writing this brief article is to call the attention of the general practitioner to two very important conditions that are too frequently not diagnosticated until too late.

In my opinion more women lose their lives unnecessarily from cancer than from any other preventable cause. I mean that the great fatality of cancer in women is dependent upon neglect of the doctor to make an early diagnosis of cancer of the breast or uterus—the two most frequent locations of cancer and at the same time the locations where the disease is most amenable to treatment.

The marvelous improvement in prognosis (after early operation) in these two classes of cancer in the past twelve years does not seem to have been appreciated by the general practitioner as it should be—a dozen years ago not more than 15 to 20 per cent of operations for mammary carcinoma resulted in cure, and but few cases were operated; while the mortality from uterine cancer was almost 100 per cent—not more than one or two out of a hundred were cured. To-day if diagnosis is made as early as it can be by careful, educated, observing surgeons, the mortality can be reduced to possibly less than 50 per cent in both breast and uterine cancers, and when we remember that about one-half of all the cancers occur in one or the other of these locations we begin to realize the import of the subject.

Every physician, and thru his profession the laity, must learn that every unnatural bloody discharge from the genitals of a woman of any age demands an investigation that will decide whether or not it is due to cancer. Age does not exclude cancer—I have frequently seen and operated upon both breast and uterine cancer in women below the age we used to count prohibitory.

If this simple rule were followed it would be the means of saving thousands of lives annually. No greater nor more dangerous fallacy exists than that flooding is a normal condition during the "change of life"—and members of our profession must lose no opportunity to explain to their patrons that such is not the case—that such a flow is unnaturad and must be investigated and proven to be due to some cause other than cancer.

After the menopause has been establisht every return discharge should be considered presumptive of cancer till proven otherwise. While not every erosion of the cervix is cancer every known cervical laceration should be closely watcht after the age of 50, and any change that occurs defined positively, or, what is far better, every case of lacerated and inflamed cervix should be amputated before that age so as to avoid the danger of malignancy occurring in the diseased tissue; for it is a well-known fact that most of the cancers occur in scar tissue.

In all suspicious cases we should not wait to see what will develop, but rather investigate the case until we either prove the absence or existence of cancer, and this should be done within a week or ten days in any case of doubt. If the family physician is not able to make an absolute diagnosis he should call to his aid some one who can.

The waiting for development plan is criminal and costs innumerable lives that might and ought to be saved.

The physician is as responsible, morally, for letting the golden period pass when an operation could save the patient, as he is for an error in dosage that results in the death of his patient. This in my opinion is the measure of our responsibility in this matter, and in my own limited field I am trying to impress the responsibility on my fellow-laborers.

The same positive rule applies to "lumps" of all kind in the breast. Every tumor occurring in the breast must be defined as early as possible and with but few exceptions should be speedily removed.

There are but few innoxious tumors that occur in the female breast. Many "lumps" may remain harmless for years, and then cause trouble. An adenoma or adenofibroma may remain for years without change in a young woman's breast—only to take on rapid growth when pregnancy occurs, or malignancy at the menopause. It is far safer and better to remove all such growths at once and thus avoid possible future trouble.

Every tumor occurring in the breast after the menopause should be removed at the earliest possible moment after its discovery. This rule is absolute and most important. The man who waits for retraction of the nipple or for axillary involvent or anything else to "verify" a diagnosis of cancer is guilty—HE is the cause of death; instead, he should get the patient into a modern hospital and remove the breast and clean out the axilla; i. e., do a complete radical operation for cancer of the breast at once. By so doing he will have probably saved the patient an untold amount of agony, and prolonged her life for years. Every case of eczematous disease of the nipple must be watcht very closely and if it does not yield promptly to proper remedies it should be considered malignant and treated accordingly.

My plea is for a positive diagnosis in every case that shows any suspicion of malignancy, and while I have offered nothing new I have made suggestions that, while they should be known to every practitioner, are followed by but few, to the great detriment of thousands of poor, unfortunate women annually.

Hemorrhage from the uterus sometimes persists without any discoverable cause and in spite of all methods of treatment save hysterectomy. Ohlshausen, of Berlin, has lately recorded a case of uncontrollable hemorrhage of the endometrium, in which he tried repeated scraping and hemostatics of every description; but with no permanent result. He finally resorted to extirpation of the uterus. The macroscopic appearance of the removed organ showed no pathological lesion—the uterus appeared perfecty normal. The hemorrhage might have been ascribed to a constitutional hemorrhagic diathesis, but there was no undue bleeding during the operative work; so that it is probable that arterio-sclerosis of the uterine arteries was the possible cause of the hemorrhage.

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The spelling found in this magazine is that voucht for by the most prominent educators of this country, and is recommended for general adoption.

ST. LOUIS, AUGUST, 1900.

EDITORIAL NOTES.

It is said there are more doctors in the Iowa Legislature than in any other similar body in the United States.

Upon this the medical profession of Iowa is to be congratulated. With a lot of good men, ethical physicians, thoroly familiar with the needs of doctors, as well as of the people, representing various sections of the state, it may be believed that the interests of the public will be better conserved than ever before, and that the laws governing the practice of medicine and protecting the public health will not be changed at the instigation of quacks, who are always seeking legislation favorable to themselves, regardless of the effect upon their future victims.

In North America doctors have not taken such interest in political affairs as they have abroad. In some Spanish and Portuguese lands, indeed, it would seem almost impossible for the political machinery to move without the direction of medical men; and in the German countries doctors are ever foremost in the political struggles whenever the welfare of the common people or the interests of human liberty are at stake. In every socialistic movement, in every attempt to better the condition of the laborers of the civilized world, in every struggle of democracy against plutocracy, the physician elsewhere than in the United States will always be found at the forefront of battle.

The reasons why he has not been thus found in this country are two in number. First—conditions have been such that the fight for a competency (and alas, too often for mere subsistence) has been so severe as to tax to the utmost the energies of the country practitioner; to give up practice for legislative or gubernatorial honors would have meant deprivation for the loved ones at home, with an ultimate loss of prestige which would have meant years of suffering. The average doctor of the recent past has been a poor man; one who has workt his way from the school-room, the printer's case or the furrow to a complete local success as a neighborhood physician—nay, often to the most elevated position among the great specialists of cities. Second—until lately, the education of the average American practitioner has been so deficient as to practically disqualify him from intelligently and satisfactorily representing any constituency.

That Iowa has now sent a large number of her best medical men to her legislative body, shows that medical men of that section have become financially independent from the wonderful natural resources of that remarkable state, and that the higher preliminary education now required by every medical college is bearing good fruit, indirectly, as well as directly. As a deduction from this evident truth it may be remarkt that when every physician in America must have had a college education before entering a medical school, our legislatures and halls of Congress will have that number of representatives from the ranks of medicine to which the profession is really entitled.

It cannot be denied that the doctor, by the very nature of his calling, is far better trained for the duties of state than is the average lawyer. The physician is compelled to weigh every question unprejudiced by any motive save that of arriving at the truth; the attorney is paid to carefully ignore every element of truth which does not bear directly in favor of his client. The medical practitioner learns to conceal that which should not be known to all the world—the very laws of the land enjoin secrecy—so that, when he speaks, his words convey only that which he wishes them to; the legal practitioner is oft required to shout from the house tops all that he knows (and not seldom more) in order that he may convince the people that he is right—the one learning the value of few words; the other, the weight of many. The doctor, by the attempts of ungrateful patients to defraud him of his hard-earned fees; by the adverse decisions of petty courts against his claims for remuneration which he feels that every honest man should know to be just and right; by the verdicts of malpractice thru which he is unjustly robbed of his few earnings which represent his very heart's blood, learns the real value of true justice; the lawyer, by his efforts to free his patron from the meshes of the law, learns the worthlessness of the very statutes he has, perhaps, helpt to make. How better, then, the life work of the physician trains him for legislative work than does that of the attorney!

The doctor, more than any other man in his community, learns to appreciate honesty, and justice, and right—the three principles upon which all law should be founded; and to ignore the influences of ignorance, of bigotry, of wealth, of depravity and of immorality—the things to which too many politicians yield in their wild desire for continuance in office, the result being that viciousness, rather than righteousness, triumphs. Politics corrupt good men; unholy legislation succeeds. In the good time coming, when right shall triumph over greed, when the welfare of mankind shall be of greater import than the interests of trusts, when the man shall be regarded more than money, the doctors will be found in numbers great among those who have reformed legislatures.

As already intimated, the ranks of socialism abroad are led by medical men, and in America, too, some very prominent practitioners are becoming interested in the socialistic plans—some by reason of their education and liberal tendencies, knowingly; others, by their line of work, unthoughtedly. Perhaps it never has occurred to the surgeons who are employed by great railway corporations that the basis of their contract is essentially socialistic. Take the common system in vogue in the West, for example: Each employe agrees to pay the sum of 50 cents a month for the maintenance of hospitals and the salary of surgeons to look after himself and companions suffering from accident or disease, perhaps also the payment of a small sum to the family of the deceased, in case of a fatal ending. Here is illustrated, typically, the benefits to be derived from communism, from association, from socialism—tho the promoters would, in most instances, repudiate the name: each member of the commune, society, union, or whatever name may be desired, simply pays a certain sum for a definite purpose—the good of the whole, rather than of the individual, tho he may unfortunately be an unwilling beneficiary at some time; and it is this possible contingency which makes him contribute to a system that he does not understand, rather than a desire to help his fellow-laborer if he fall by the wayside. When he shall have attained that point of progress from which he will feel impelled to pay his mite merely for the good of his co-workers instead of from the selfish motive of self-protection, he will have become a full-fledged socialist in thought as well as in deed. And the doctor, thinking of the problems of socialism (as he must sooner or later) will have become an intelligent socialist, designedly, long before his corporation-patron shall have recognized the benefits to be derived from communism.

But, says the carping critic, is not the railway surgeon, albeit he is a college professor and a distinguisht member of the American Medical Association, in just the same position as the surgeon to the "50-cent hospital association," which has been so bitterly condemned by medical societies and criticized by medical journals? Precisely! But the profession at large has failed to recognize it—possibly because of the immensity of the one and the littleness of the other. It is a common expression that the man who steals a thousand goes to prison, while he who steals a million goes free. The parallel is an exact one between this and the hospital organizations. The surgeon who organizes a few hundred working girls into a "Woman's Hospital Association" and equips a few rooms as best he may from the perhaps 300 50-cent pieces he receives monthly is made to cease his objectionable practice, close his co-operative hospital, throw the poor girls back upon the tender mercies of a cold world, or at least to become a burden to some over-workt doctor who gets neither thanks nor pay; the "chief surgeon" of a railway employes' association (commonly termed "chief surgeon of the railroad"—which he is not), with 30,000 or 60,000 members, is elected president of the society which condemned the methods of his brother practitioner. The one had a small remnant of the $150 a month received from the members; the other has a "salary" of $6,000 per annum. Verily—consistency, thou art a moss-agate!

"Then," exclaims the doctor who does lodge-work at $1.00 per annum for each member, "I am as guilty as the man who runs an assessment hospital?" Exactly so; and "lodge doctors" and "contract surgeons" have been condemned time and again by

societies in every part of the world. Even now, our Canadian brethren are treating lodge-doctors by expulsion because they agree to do the family practice of each member of the lodge at $3.00 a year—1,000 members, $3,000 income, plus what can be made outside; but no one has heard of even a vote of censure for surgeons working for railroad and other corporations upon an exactly identical contract, save that the assessment per individual is far less than the $3.00 lodge contribution. Across the border also, then, consistency is a jewel of purest ray serene, that to be appreciated hath but to be observed within the halls of medical societies.

But, it may be askt, how can one reconcile the three statements: (1) That "lodge-practice," "contract-practice," "assessment hospitals," "railway surgery" and the like are based upon a purely socialistic or communistic principle; (2) that such contract work is in violation of the Code of Ethics, is reprehensible, is objectionable; and (3) that the twentieth-century physician will be the head of legalized socialism? The answer is easy.

Under our present system of government, the physician is educated at his own expense, lives at his own expense and is buried at the expense of his friends, for he usually fails to accumulate enough to pay for cremation. His very life depends upon the patronage of his neighbors, derived thru his competition with other practitioners of the community—a typical struggle for existence and survival of the fittest. It is not right that the one who is not weakest should be compelled to go to the wall by a combination which he can in no way control, but which, by mere force of accident, his hitherto unsuccessful rival may profit by; it is a struggle in which intrigue, and sometimes bribery, or worse, triumphs (temporarily at least) over intelligence and skill and honesty—all that makes for good in our profession. It is not a victory for socialism when such a result occurs—it is the brute force of numbers against ability with the weakness of isolation; unfair competition. In true socialism there is no unfairness and no competition.

When our country shall have reacht that period of her development that true socialism is well establisht, the doctor will be a government official, educated by the state, paid by the state according to his ability and the amount of work performed, and supported in an appropriate manner when his days of toil are honorably ended—retired on full pay at the age of 65, as is the army. His duty shall not be to merely cure the sick (who will be kept in government hospitals at the expense of the state, and pensioned if incurable), but to prevent disease and thus lessen the burden of public expense. Thus he will not be placed in his present anomalous position—presumably happiest when there is the most human misery about him, since upon the amount of sickness must depend his financial and professional success. In the good, socialistic era soon to come he will be best pleased when he can be least busy; prevention of sickness means leisure and the enjoyment of his income. A salaried officer, his dread of poverty for his declining years will not, as now, interfere with the devotion of much of his time, energy and thought to the suppression of disease and physical betterment of his race. Truly the adoption of national socialism will be the dawn of the Golden Era of Medicine.

In those days the same principle upon which the assessment-hospital is founded and lodge practice based, will be of universal application and competition for financial returns will no longer exist. But as things now are, the application of the socialistic plan to the practice of medicine, limited as it must be to corporations, associations and lodges, is highly objectionable, in that it robs some physician of business which would otherwise be his, without special benefit to the other man who does the assessment work. The plan is ideal in theory and would be ideal in effect if universally adopted, and the scale of pay made uniform to all doctors—or dependent upon the share of work done. But with our present competitive system it works an injustice upon the man outside. Realizing the element of injustice thru the misapplication of a right plan, the doctor of the near future will of necessity be the greatest champion of national socialism, for on its early acceptance must depend the happiness of the doctor yet to come and the proper advancement of medicine as a science, untrammelled by the pecuniary struggle for existence of its enthusiastic followers.

Apropos to some of which it may be mentioned that the democratic candidate for governor of Missouri, Hon. A. M. Dockery, of Gallatin, is a graduate in medicine.

As a vaginal irrigation for leucorrhea, Lutard advises (New England Medical Monthly):

Potassium chlorat, 12.
Wine of opium, 10.
Tar water, 300.

M. Sig: Add two or three drachms to a quart of warm water.

SURGICAL NOTES.

Dr. W. H. Middleton, of Davenport, professor of surgery in the Medical Department of the State University of Iowa, recently read a paper on "The Varieties of Appendicitis and the Importance of Their Recognition," as furnishing the indications for treatment. He maintained that a properly conducted operation adds very little danger to life, and where a surgeon can make a hundred abdominal sections in which it may be said of ninety-nine that they might have recovered without operation, and of only one that death would have certainly ensued without it, he should still believe that the operator was doing God service and the profession credit. Dr. John B. Murphy spoke upon this phase of the subject—why we operate, and when. Speaking of the subject from a mortality standpoint he excluded three classes of cases and retained only one. He excluded appendicular colic, as while he believes there is such a thing, he does not consider it a surgical lesion. He also excluded catarrhal appendicitis (as it is generally understood), as he thinks it does not materially, if ever, jeopardize the life of the patient. He likewise excluded the "mild recurrent variety," which may be either a recurrent catarrhal appendicitis or a recurrent appendicular colic. Dr. Murphy then devoted his attention to the acute infective variety of the disease, saying: "In a very large proportion of cases, in the first twenty-four hours the infection is confined to the wall of the appendix. In the second 24 hours the pathologic conditions may vary from an increast quantity of pus or inflammatory debris in the appendix to acompletely gangrenous or necrotic appendix, or to a perforation of the organ, with a circumscribed or general peritonitis at the end of 48 hours. If the diagnosis is made in the first 24 hours, the surgeon can operate during that time with a mortality of 2 per cent at the maximum, as in my own work I have never seen a death from a case operated on inside of 24 hours. Inside of the first 24 hours the chances for operating are much better; the surgeon is much more certain of his ground; after that time one must be guided solely by the condition of the patient, it being best to wait until the subsidence of acute symptoms in many instances."

The difficulty of maintaining in proper position the riding fragment in fractures of the leg has lately been considered by Dr. E. C. Ruth, Professor of Anatomy and Clinical Surgery in the Keokuk Medical College. It is especially hard to reduce the riding fragment and maintain it in good position in spiral fractures which are much more frequent than is commonly supposed. If the bones in a spiral fracture are examined, it will be seen that as long as the axes of the two fragments hold their proper relation to each other there is no tendency towards displacement, but the least torsion will cause the appearance of the riding fragment, and some slight shortening. When this spiral fracture takes place as the result of an accident there is almost always an accompanying fracture of the fibula and the end of one of the fragments is very apt to become entangled in the soft tissues and thus prevent the proper amount of rotation of the limb to untwist the tibial fragments back to their normal position. The traumatic torsion sometimes persists to such an extent that it is necessary to operate, and even then it seems almost impossible to prevent the fragments springing back to their original twisted position until the fibula is also cut down on and the ends put in their proper relations. Operation is called for when, after external manipulations, a markt deformity persists.

The following solution is highly recommended for the production of local anesthesia in operative work in the ear: 5 or 10 parts of cocaine hydrochlorate, 50 parts of dilute alcohol, and 50 parts of anilin oil. This solution is equally suitable for operations on the tympanic membrane, on granulations, or for the removal of ossicles. Alcohol and anilin oil dehydrate the tissues and favor penetration of the cocaine to the nerve terminations of the inner layer. The anilin oil also has a favorable influence on the suppurative process. The solution may be used on any mucous membrane for local anesthesia.

The latest application of the hot air treatment is to the cure of poisoned wounds of the extremities, with the resultant lymphangitis and lymphadenitis. Poisoned wounds are generally on the extremities, and, except in the very severest forms of blood-poisoning, the infective inflammation is worst in the immediate neighborhood of the wound, at any rate at an early period, so that in far the greatest number of cases the treatment is easy of application. The effect of local hot-water baths is marvelous in almost immediately calling a halt in the onward march of the inflammation, in soothing the pain, and causing speedy resolution, except where suppuration has begun, and in limiting the suppuration when it has commenced; and equally good results are now claimed for the hot air. It is said that when the case

is seen in time, the effects of the poison being still fairly localized, this treatment, thoroly carried out and patiently persevered in, will speedily cut short the attack, preventing any further spread of the inflammation, unless it has already past the axillary or inguinal glands.

A plan for inducing speedy and perfect ether anesthesia without any of the usual discomfort to the patient is this: From one to two drams of ethylic bromide are placed upon the inhaler, and, in from 30 to 45 seconds, according to the freedom with which the patient breathes, the administration of the sulphuric ether is begun, without changing the inhaler, and proceeded with as in ordinary ether anesthetization. It has given perfect satisfaction in a large number of tests.

If one does not like the formaldehyde catgut put up in hermetically sealed tubes by Hollister, of Chicago, and others, the following method of sterilization of the gut will be found satisfactory: After thoro cleansing with soap and water it is freed from fat by immersing in 1 part chloroform and 2 parts ether for 24 hours, then it is tightly wound in single layers on suitable spools. The spools are boiled for from 10 to 30 minutes in sublimated alcohol (1 to 2000); or in 1 to 1000 chromic-acid-alcohol solution if the catgut is to be chromicized. The spools are then thoroly washt by agitation for from 1 to 2 minutes in cold or warm sterile water, carbolic acid solution or bichloride solution of any strength. The catgut spools are preserved in strong alcohol, or better, in a mixture suggested by Dr. A. S. von Mansfelde of Asbland, Neb.: Alcohol 90 parts, chloroform 4 parts and sterilized castor oil 6 parts.

A double inguinal hernia of one side is reported to Journal of the American Medical Association by Dr. C. C. Allison, Professor of Clinical Surgery in the Omaha Medical College. It occurred in a man of 56. A hernial protrusion of the oblique variety was first reduced and the sac was excised and sutured. It was then found that the larger part of the hernial protrusion remained. A direct inguinal hernia was replaced and the sac was excised and sutured; the cord was transplanted by Bassini's method and uneventful convalescence followed. It is believed that this form of hernia has not been previously described.

A paste said (by Bougard) to be superior to Marsden's arsenical for the removal of superficial epithelioma, is made thus:

Wheat flour
Powdered starch aa 60.
Arsenious acid, 1.
Cinnebar.
Sal ammoniac.
Corrosive sublimate, aa 5.
Solution chlodide zinc, 245.

Rub each ingredient separately, and then together in an earthen vessel, and finally add the solution of the chloride of zinc drop by drop.

For chronic eczema of the hands, New England Medical Monthly says that Edlefsen has found a successful mode of treatment. Eczema on the hands and fingers chiefly affects washerwomen, tho not infrequently people of the better classes. He orders a paint consisting of pure iodine 0.1., iodide of potassium, 0.25; glycerine, 12.00; the paint is applied every evening, and the hands are envelopt in lint. The irritation is always relieved, and in 14 days the disease is generally cured. This treatment has been adopted with success in many cases where other remedies have failed. In the more obstinate cases boric ointment has been applied in the morning, and the iodine paint in the evening.

BOOK NOTES.

In this day, when all the (American) world is running wild over osteopathy, Christian Science, Welmterism and the like, it behooves every physician to become thoroly familiar with each particular form of charlatanism in order to defend himself against the accusation of ignorance of methods and results. Nay, more—he should also become acquainted with the fundamental principle upon which they are all founded; and, in certain instances, apply the principle to the cure of chronic conditions. There is no necessity to deny that sometimes wonderful results are accomplisht by osteopathic healers, by Christian Scientists or even by "absent treatment"—cures, too, of patients apparently helplessly affected so far as ordinary methods of treatment are concerned; nor yet is it needful to denounce such relief as "frauds"—they are not. Yet in most instances the remarkable effects of such treatment can be ascribed wholly and solely to a power or force which ought to be fully understood by every scientific physician—but unfortunately is not. Dr. Herbert A. Parkyn, of Chicago, has written an elaborate work entitled "Hypnotism and Suggestive Therapeutics" (400 pages, bound in red cloth, price $5; publisht by Suggestion Pub. Co., 4020 Drexel Bld., Chicago), in which he explains fully every point of interest concerning not only hypotism, but of every other form of suggestive therapeutics; and so carefully elaborating rules for treatment that every doctor may successfully apply the principle of auto-suggestion to the cure of patients hitherto hopelessly ill of certain chronic troubles, and to the alleviation of suffering in many incurable diseases. In the application of these rules or practices the doctor does not have to stoop to deception nor to any of the objectionable methods of the fakirs who make use of them, but applies them intelligently and scientifically. There can be no doubt that the time is near at hand when every doctor will appreciate the value of this practically ignored principle of healing, and reap the profit of such knowledge; for the dissemination of which Dr. Parkyn will deserve much credit, and the excellent work being done by him at the Chicago School of Psychology will receive well-merited praise.

"Ulcer of the Stomach and Duodenum" is a recent publication of P. Blakiston's Son & Co., of Philadelphia. It is written by Samuel Fenwick, M. D., Consulting Physician to the London Hospital, and W. Salto Fenwick, M. D., Senior Physician to the London Temperance Hospital, price $3.50, bound in cloth, gold top. This is one of the most interesting books of the year, being written in attractive style, copiously illustrated by photo-engravings and enlivened by reports of many instructive cases. It deals not only with gastric and duodenal ulcers, but with the sequelae and complications as well, thus making a volume of some 400 pages, octavo; the complications, including perigastric and periduodenal abscess, tetany and other nervous phenomena accompanying gastriectasis, pernicious anemia, gastric catarrh, etc., all receive careful attention. To the doctor who intends to be thoroly familiar with every aspect of gastric diseases this book is indispensable; to the surgeon it is of much value for the sidelights thrown on perforative peritonitis, abscess and other surgical consequences of ulcer.

William A. Purrington, a distinguisht lawyer of New York City, Lecturer upon Legal Medicine in the University and Bellevue Hospital Medical College, has written a work on "Christian Science' which every doctor should read. This peculiar "sect" is becoming so numerous and so zealous that no physician can afford to ignore it, nor yet be unfamiliar with its strong as well as weak points. In this book will be found every subject pertaining to Mrs. Eddy's alleged "wonderful discovery" thoroly covered, as well as a well-written strong plea for the protection of children and other helpless sick from the unscrupulous "healers" of the Eddy cult. Especial attention is given to the legal aspects of "Christian Science." The opening paragraph (a quotation from the preface of Mrs. Eddy's Miscellaneous Writings), is not without value to many doctors; viz.: "Christian Science demonstrates that the patient who pays whatever he can for being healed is more apt to recover than he who withholds an equivalent for health." The book is publisht by E. B. Treat & Co., 241 W. 23d st., New York, and is sold at $1.

"A Treatise on Appendicitis," by John B. Deaver, M. D., Surgeon-in-Chief to the German Hospital, Philadelphia, second edition, thoroly revised and considerably enlarged, illustrated with 22 full-page plates. Octavo, $3.50 net. P. Blakiston's Son & Co., Philadelphia. It is a pleasure to announce the appearance of the second edition of this valuable treatise. There is no subject of greater interest to-day—after all of the discussion—than that of appendicitis, to both physician and surgeon. While Dr. Deaver's book does not settle any of the moot points, and while his position in regard to the necessity for operation may not meet the approval of some conservatives, no one can read this book and not feel that he has gained important and valuable knowledge of an important topic. Every surgeon who has not the first edition should buy this book—and read it. It would be of immense value to the human race if every physician would do likewise. The distinguisht author is to be congratulated upon the speedy exhaustion of the first edition of his work.

The Iowa Medical Journal has past from the hands of its founder, Dr. J. W. Kime, of Ft. Dodge, into the possession of Dr. E. E. Dorr, of Des Moines. The office of publication has been removed to Des Moines. The initial number (July) under the new management "shows up" well, and speaks in favor of a long and successful career for this always excellent publication. It is a mistake to send the journal out with uncut pages, following the English magazine style, as life in America is too short to cut pages of medical publications; and many a worthy article will pass unread if the pages are not cut. So with compliments to the new management, the advice is given: Get a cutter.

TREATMENT OF CONJUNCTIVITIS.

Either as it appears as a simple catarrhal inflammation of the conjunctiva, affecting one individual or when it is encountered in an epidemic, there is no doubt but that catarrhal conjunctivitis is an affection of great importance. This affection is essentially simple, but if allowed to go along without correct treatment it may terminate in entire loss of vision. However, if the affection be given proper and timely attention it yields with great readiness to treatment.

Either as simple catarrhal conjunctivitis seen in a single individual, or when the affection manifests itself in the epidemic form, the treatment is essentially the same. Of course, individual peculiarities in each case make certain indications fitting and even imperative. One thing which a large experience with the disease has taught me is, that prompt and systematic treatment must be instituted in every case. Often patients with strumous diathesis will have chronic conjunctivitis, and persons whose health is poor will also have protracted forms of the affection, with the loss or great impairment of sight, when if proper and timely treatment had been instituted a cure could have been effected within a very short time. In the treatment of catarrhal conjunctivitis there have been many mischievous measures brought to bear.

All and everything which produces irritation will render all the elements in the case worse. We must never employ strong solutions. A lotion composed of 10 grains of sulphate of zinc to an ounce of distilled water will aggravate any case. All lotions must of necessity be mild and soothing.

As a curative means I have come to rely on what I term the antiseptic treatment. This has been productive of better results in my hands than the old-time remedies.

In carrying out this treatment I first have the nurse to bathe the eyes thoroughly with this antiseptic mixture:

℞ Hydrozone, 3 j.
Aqua, q. s. ad 2-3 iv.

This mixture is used three or four times daily, as the case may appear to demand. Just as often as this mixture has been copiously applied and the eyelids have been dried, I apply, by means of an ordinary glass medicine dropper, two drops of Marchand's Eye Balsam.

This remedy reaches every part of the conjunctiva by the movements of the lids, and it is not irritating; the patient generally makes rapid progress to recovery.

By this treatment I have found my patients to recover in from 36 hours to three days. In fact, my success has been such that I now rely upon this treatment entirely in this affection.

Four months ago an epidemic of catarrhal conjunctivitis broke out in a boarding school. I was called and ordered these remedies used on every case that presented itself. The nuns told me that all the cases got well speedily.

Mr. Samuel S., age 39. This patient had been suffering, as he put it, with "sore eyes" for three days. It was a simple case of catarrhal conjunctivitis, but gave him great discomfort. On the treatment described above he entirely recovered in two days.

Mrs. Laura S., aged 22. This patient thought she had something in her eye, but examination revealed catarrhal conjunctivitis. On this treatment she made a speedy recovery.

These are only two of the several hundred cases treated on the antiseptic principles.—Medical Summary.

SUPRARENAL THERAPY IN HAY FEVER.

Extract of the Suprarenal Capsules is superior to all other remedies in the treatment of Hay Fever. It may be used both locally and internally. Locally it should be applied in the form of an aqueous solution, 6 to 12 per cent strong, by means of a spray, on pledgets of cotton or by cataphoresis. Internally, in doses of two to three grains, the Extract of Suprarenal Capsules reduces the turbinate bodies, lessens the irritation, stops the sneezing and discharge, and controls the vaso-motor vessels of the nose. The Extract should be given until giddiness or palpitation is observed, or until the nasal membrane shows that the vaso-motor paralysis is under control, when the dose should be diminished. If the disagreeable symptoms reappear, increase the dose until the patient is again comfortable.

The results from the use of Extract of Suprarenal Capsules in the treatment of Hay Fever entitle it to be classified as a specific.

Physicians with patients troubled with Hay Fever should, by all means, give them the benefit of the Suprarenal Therapy.

Extract of Suprarenal Capsules in powder and tablets may be obtained from Armour & Company.

DO YOU KNOW THE VIRTUES

Of the waters and climate of Eureka Springs, Ark.? Do you want to know? We have a booklet on the subject which is yours for the asking; it is free. Address Bryan Snyder, G. P. A., Frisco Line, St. Louis.

REMOVED TO NEW YORK.

Dr. Samuel G. Gant, recently elected Professor of Rectal and Anal Surgery in the Post Graduate School and Hospital, has removed from Kansas City, Mo., to No. 58 West Fifty-fifth street, New York City.

THE NEW YORK MEDICAL JOURNAL, VOL. LX., NO. 22.

Advantages of the Elixir Six Bromides over the Bromide of Potassium. Bromide of Potassium when given alone has a tendency to produce Anaemia, Digestive Disturbances, Skin Eruptions, marked increase of solid constituents in the urine, and a Depressing Effect upon the Heart. Bromide of Soda has none of these effects. The Soda prevents Gastric Ailment, increases the action of the Kidneys without affecting the solids, and has no depressing cardiac influence. The Ammonia also counteracts the depression caused by the Potassium. The Iron, the Elixir contains is a safeguard against Anaemia. The Cannabis Indica aids the Soda in preventing the cumulation of the Bromides in the system, hence in Epilepsy and similar disorders where a Bromide has to be long continued, the Elixir Six Bromides is specially valuable. Always use the precaution to give a Laxative at least every two weeks when a Bromide preparation is to be continuously administered, especially if there is a tendency to Constipation.

AN AMERICAN REMEDY IN IRELAND.

The Antikamnia Chemical Company have forwarded to us from their London House, No. 46 Holborn Viaduct, samples of their five-grain antikamnia tablets, and also of antikamnia and codeine tablets. The former are so well known that it seems hardly necessary to do more than refer to them as an unequalled analygesic. The antikamnia and codeine tablets contain four and three-fourths grains of antikamnia and a quarter of a grain of codeine. This is a valuable combination, the synergetic effects being all that could be desired.—Extract from Dublin Medical Journal, March, 1900.

INDIAN TERRITORY MEDICAL SOCIETY.

At the spring meeting of this society the following officers were elected: President—Dr. LeRoy Long, Caddo; Vice-president—Dr. D. Gardner, Lehigh; Second Vice-President—Dr. J. N. Fain, Wagoner; Secretary and Treasurer—Dr. Fred S. Clinton, Tulsa. The next meeting will be held in Tulsa.

NOTICE.

All Surgeons, Assistant Surgeons, Acting Assistant Surgeons or Contract Surgeons, and Hospital Stewards, who served in the Army or Navy of the late Confederate States, will please send their post office address to Deering J. Roberts, M. D., Secretary Surgeons' Association, C. S. A., Nashville, Tenn.

CHRONIC CONSTIPATION.

In a large majority of troubles that come to our attention the first manifestations are indicated by the liver, and if the function of this organ can be restored to a normal condition a great many of these troubles can be aborted. Chronic constipation often starts in a congested or obstructed portal circulation, and soon all the incidental manifestations of constipation are evidenced. In congested or obstructed portal circulation we want to remedy several conditions. One is to relieve the engorgement of the liver, another to remove the excess of bile in the gall bladder; another to increase the peristaltic action of the small intestines; and to see that the rectum is free from impacted feces. The rectum and liver are intimately associated through the hemorroidal arteries, and irritation of the rectum deranges the liver, and vice versa. Drastic purges or cholagogues are not indicated, but a stimulating cholagogue which empties the gall bladder is preferable. The bile in the intestinal tract increases the peristalsis and in some cases this movement has to be assisted. These indications are fulfilled in the use of Chionia, which is an hepatic stimulant, and indirectly but surely a reliable laxative.

In the treatment of derangements of the portal circulation, if the lymphatics are strengthened and stimulated we get an amelioration of the symptoms. Drastic purges are generally used for this purpose, but they will frequently congest the hepatic glands, and in all probability increase the constipation already existing. Chionia stimulates the hepatic glands without producing congestion, and also increases the secretion of bile. Through its regular action on the portal circulation, and its stimulating effect upon the liver, the functions of this organ are increased or restored to normal. In the use of all drugs which act as laxatives or purges it is of great importance that the rectum should be free from impacted feces, and enemas should be used for this purpose, in preference to suppositories, for the latter will often cause a rectal irritation.

Where Does Your Business Come From?

A QUESTION TO ADVERTISERS!

In its last forty monthly lists THE AMERICAN JOURNAL OF SURGERY AND GYNECOLOGY has printed the names and addresses of American doctors who have subscribed for the JOURNAL, resident as follows: Alabama, 141; Argentina, 2; Arizona, 28; Arkansas, 202; British Columbia, 67; Bahama Islands, 3; California, 284; Colorado, 171; Connecticut, 84; Delaware, 19; District of Columbia, 87; Florida, 84; Georgia, 118; Hawaii, 3; Idaho, 43; Illinois, 562; Indiana, 274; Indian Territory, 139; Iowa, 376; Kansas, 413; Kentucky, 152; Louisiana, 116; Maine, 42; Manitoba, 58; Maryland, 114; Massachusetts, 122; Mexico, 5; Michigan, 141; Minnesota, 104; Mississippi, 89; Missouri, 641; Montana, 49; Nebraska, 179; Nevada, 8; New Brunswick, 24; New Hampshire, 36; New Jersey, 81; New Mexico, 49; New York, 327; North Carolina, 61; North Dakota, 38; Nova Scotia, 39; Northwest Territory, 31; Ohio, 281; Oklahoma Territory, 109; Ontario, 238, Oregon, 71; Pennsylvania, 202; Prince Edward Island, 3; Quebec, 53; Rhode Island, 36; South Carolina, 83; South Dakota, 22; Tennessee, 152; Texas, 472; Utah, 22; Vermont, 52; Virginia, 123; Washington, 81; West Virginia, 11; Wisconsin, 181; Wyoming, 24.

TOTAL, 7,638

The following is the list received during the past thirty days:

ARKANSAS.
Dr. J. F. Osburn, Corning.
Dr. D. C. Wylie, Grand Lake.

CALIFORNIA.
Dr. P. F. Bullington, Oroville.
Dr. T. W. Stone, Stockton.
Dr. C. F. Gladding, West Berkeley.
Dr. L. D. Johnson, Whittier.
Dr. W. M. Moore, Santa Barbara.
Dr. C. M. Johnson, El Cahon.

CONNECTICUT.
Dr. D. W. McFarland, Green's Farms.
Dr. F. H. Barnes, Stamford.
Dr. F. B. Newton, Stafford Springs.
Dr. M. Elizabeth Lawrence, New London.

IDAHO.
Dr. C. H. Carlyle, Lookout.
Dr. I. R. Woodward, Payette.

ILLINOIS.
Dr. Walter Burgess, Chester.
Dr. David Littlejohn, Chicago.

INDIAN TERRITORY
Dr. F. S. Clinton, Tulsa.
Dr. M. H. Scales, Duncan.

INDIANA.
Dr. A. E. Standacher, Terre Haute.
Dr. C. L. Wright, Huntington.
Dr. M. E. Eastman, Terre Haute.
Dr. J. T. Davis, Jeffersonville.
Dr. M. R. Combs, Terre Haute.
Dr. M. C. Wilson, Lafayette.
Dr. S. D. Spees, Terre Haute.
Dr. A. W. Vincent, Valparaiso.
Dr. L. P. Luckett, Terre Haute.
Dr. L. P. Armstrong, Newtown.
Dr. W. F. Clippinger, Evansville.
Dr. A. J. McGaughy, Freelandsville.
Dr. O. B. Williams, Andrews.
Dr. J. C. Bottorf, Corydon.
Dr. W. G. Hansford, Oakland City.
Dr. M. H. Waters, Terre Haute.
Dr. H. P. Leftwich, Indianapolis.
Dr. Edward Cox, Kokomo.
Dr. E. G. Lukenmyer, Huntingburg.
Dr. L. J. Weinstein, Terre Haute.
Dr. H. Neuneker, Elberfeld.
Dr. H. M. Arthur, Alfordsville.
Dr. M. V. Wilson, Medora.
Dr. C. E. Barnett, Ft. Wayne.
Dr. T. A. Graham, Jeffersonville.
Dr. H. A. Giltner, Chelsea.

IOWA.
Dr. A. Jolly, Hamburg.
Dr. H. C. Boyer, New Albin.

KANSAS.
Dr. W. B. Dewees, Salina.
Dr. Maggie McCrea, Winchester.
Dr. D. C. Stahlman, Moundridge.
Dr. C. M. Fisher, Seneca.
Dr. B. L. Hale, Neal.
Dr. J. L. Hayes, Howard.
Dr. W. L. White, Spring Hill.
Dr. H. L. Wood, White Water.

KENTUCKY.
Dr. Wm. Gaylor, Strunk.

MAINE.
Dr. F. H. Washburn, Lisbon Falls.

MASSACHUSETTS.
Dr. E. V. D. Bray, Charlestown.

MEXICO.
Dr. J. Theo. Wendlandt, Sahuaripa, Sonora.

MICHIGAN.
Dr. H. A. Shurtleff, Partello.

MISSISSIPPI.
Dr. W. J. Tiller, Meridian.

MISSOURI.
Dr. E. A. Hudson, Wellsville.
Dr. O. F. Pile, Memphis.
Dr. W. M. Holmes, Chesapeake.
Dr. W. H. Allen, Blodgett.
Dr. W. T. Bohannon, Nevada.
Dr. E. R. Son, Osage City.
Dr. Robt. Barclay, St. Louis.
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Dr. S. W. Downing, Thompson.
Dr. J. H. P. Baker, Salisbury.
Dr. H. R. Winchell, Rich Hill.
Dr. B. L. Sulzbacher, Kansas City.
Dr. S. W. Tickle, Niangua.
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Dr. J. V. Cowan, Las Cruces.

NORTH CAROLINA.
Dr. E. J. Nixon, Wilmington.
Dr. J. G. Price, Sapphire.

OHIO.
Dr. G. C. Hook, Bellbrook.
Dr. J. C. Morrison, Rockwood.

OKLAHOMA.
Dr. W. B. Brengle, Perry.
Dr. G. P. Johnson, Lexington.
Dr. C. W. Bacon, Pawnee.
Dr. J. B. Rolater, Oklahoma.
Dr. J. A. Hatchett, El Reno.
Dr. W. W. Spiers, Glencoe.
Dr. F. P. Hulen, Pond Creek.

OREGON.
Dr. L. M. Marquam, Eugene.

PENNSYLVANIA.
Dr. C. A. Vandervoort, Philadelphia.
Dr. L. S. Walton, Jenkinstown.

TEXAS.
Dr. E. B. Gilbert, Carbon.
Dr. B. E. Hadra, Waco.
Dr. W. J. Jones, Boquillas.
Dr. G. Sanderson, San Saba.
Dr. A. F. Newberry, Hallettsville.
Dr. Geo. S. Stell, Paris.
Dr. R. O. Watkins, Hood.
Dr. E. A. Sherrill, Hix.

WASHINGTON.
Dr. J. F. Cropp, Walla Walla.

WEST VIRGINIA.
Dr. C. T. Whiting, Newtown.

WISCONSIN.
Dr. John Binnie, Paynette.
Dr. M. J. Lower, Antigo.
Dr. T. N. Brett, Green Bay.
Dr. F. A. Forsbeck, Milwaukee.